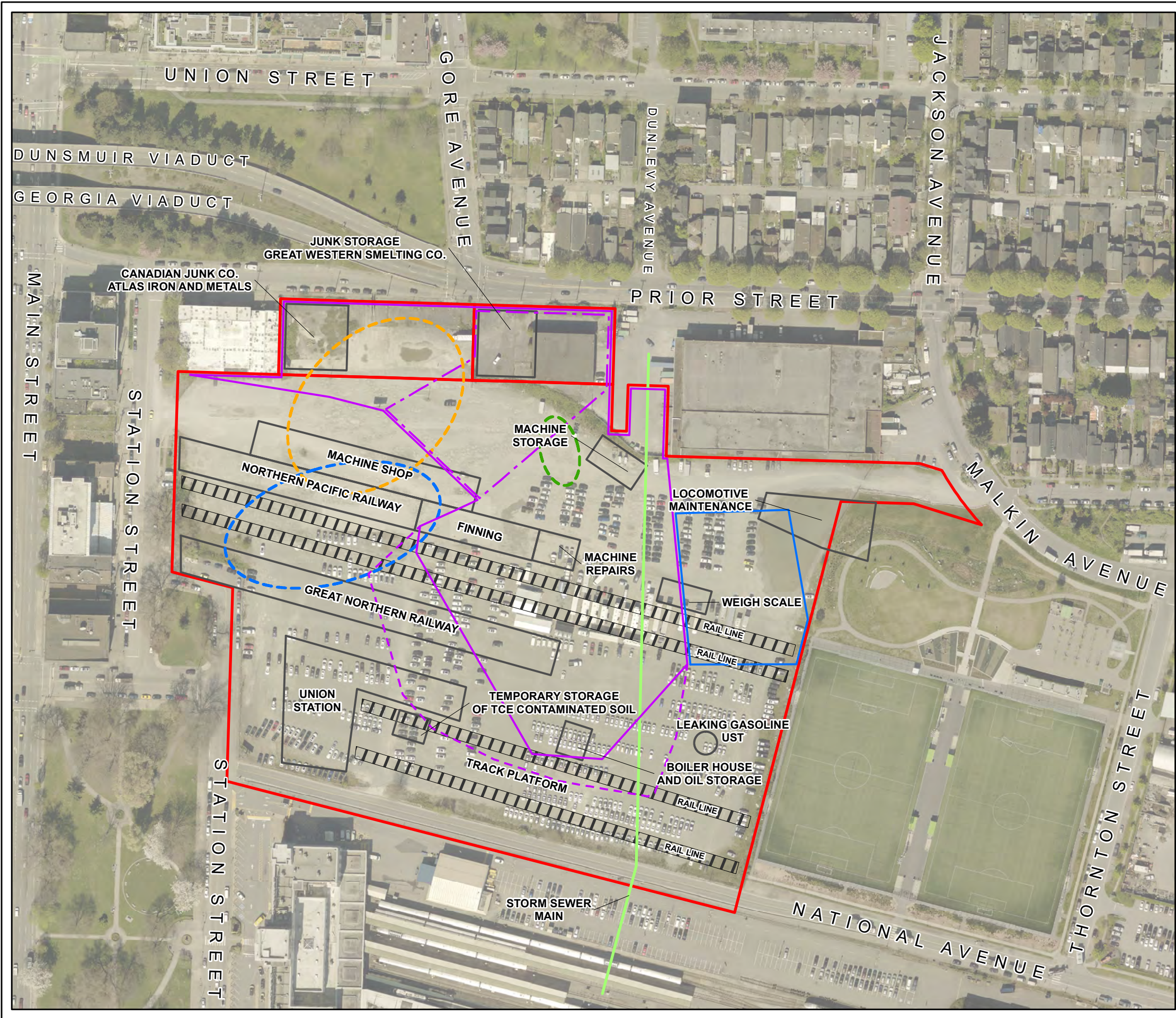


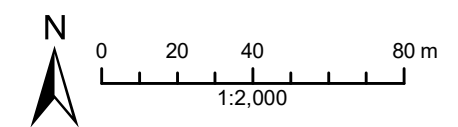
Table for Figure 19
Soil Vapour Results - Volatile Organic Compounds
1002 Station St., 250 and 310 Prior St., Vancouver, BC
Providence Health Care, PGL File 5355-01.01

	VOCs														
	trans-1,3-dichloropropene	Ethyl acetate	Freon 113	Hexane	Isopropylbenzene	Methyl Ethyl Ketone [MEK]	Styrene	Tetrachloroethane, 1,1,1,2-	Tetrachloroethane, 1,1,2,2-	Tetrachloroethylene	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethylene	Trichlorofluoromethane	Vinyl chloride
	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3	µg/m3
RDL	1.7	34	8.6	8.6	0.86	8.6	0.86	1.4	1	10	0.86	0.6	0.52	8.6	1
CSR Sch 3.3 Parkade	-	550	250000	5500	3000	40000	8000	10	300	300	40000	1.5	15	5500	9
CSR Sch 3.3 CL	-	200	90000	2000	1000	15000	3000	4	100	100	15000	0.6	6	2000	3.5
CSR Sch 3.3 RL	-	70	30000	700	400	5000	1000	1.5	40	40	5000	0.5	2	700	1

Location	Date	Bentonite Seal (m bgs)	AttenuationFactorType	Factor	trans-1,3-dichloropropene	Ethyl acetate	Freon 113	Hexane	Isopropylbenzene	Methyl Ethyl Ketone [MEK]	Styrene	Tetrachloroethane, 1,1,1,2-	Tetrachloroethane, 1,1,2,2-	Tetrachloroethylene	Trichloroethane, 1,1,1-	Trichloroethane, 1,1,2-	Trichloroethylene	Trichlorofluoromethane	Vinyl chloride		
SV10	2018-08-16	0.95	Unattenuated	-	<2.2	<45	<11	<11	<1.1	<11	1.7	<1.8	<1.1	24.500	30.1	<27	590	<11	3.4		
			Outdoor Exposure	0.0001	<0.00022	<0.0045	<0.0011	<0.0011	<0.00011	<0.0011	<0.0011	0.00017	<0.00018	<0.00011	2.45	0.00301	<0.0027	0.059	<0.0011	0.00034	
			Subslab	0.02	<0.044	<0.9	<0.22	<0.22	<0.022	<0.22	<0.022	0.034	<0.036	<0.022	490	0.602	<0.54	11.8	<0.22	0.068	
SV11	2018-08-16	0.95	Unattenuated	-	<2.2	<44	<11	57	700	<11	<1.1	<1.8	<2100	<13	<1.1	<39	1.57	<11	<1.3		
			Outdoor Exposure	0.0001	<0.00022	<0.0044	<0.0011	0.0057	0.07	<0.0011	<0.00011	<0.00018	<0.21	<0.0013	<0.00011	<0.0039	0.000157	<0.0011	<0.00013		
			Subslab	0.02	<0.044	<0.88	<0.22	1.14	14	<0.22	<0.022	<0.036	<0.036	<0.26	<0.022	<0.78	0.0314	<0.22	<0.026		
Z02 (Dup of SV11)	2018-08-16	0.95	Unattenuated	-	<1.7	<34	<8.6	55.4	769	<8.6	<1	<1.4	<860	<10	<0.86	<10	1.62	<8.6	<1		
			Outdoor Exposure	0.0001	<0.00017	<0.0034	<0.00086	0.00554	0.0769	<0.00086	<0.0001	<0.00014	<0.086	<0.001	<0.000086	<0.001	0.000162	<0.00086	<0.0001		
			Subslab	0.02	<0.034	<0.68	<0.172	1.108	15.38	<0.172	<0.02	<0.028	<17.2	<0.2	<0.0172	<0.2	0.0324	<0.172	<0.02		
SV12	2018-08-16	0.95	Unattenuated	-	<2.4	<48	<12	18	1.2	<12	<1.2	<1.9	<9.5	20	<1.2	<9.5	6.29	<12	5.3		
			Outdoor Exposure	0.0001	<0.00024	<0.0048	<0.0012	0.0018	0.00012	<0.0012	<0.00012	<0.00019	<0.00095	0.002	<0.00012	<0.00095	0.000629	<0.0012	0.00053		
			Subslab	0.02	<0.048	<0.96	<0.24	0.36	0.024	<0.24	<0.024	<0.038	<0.19	0.4	<0.024	<0.19	0.1258	<0.24	0.106		
SV13	2018-09-12	0.85	Unattenuated	-	<2.5	<50	<13	15	2.6	<13	<5	<2	<1.3	<15	<1.3	<0.75	<0.75	<13	<1.5		
			Outdoor Exposure	0.0001	<0.00025	<0.005	<0.0013	0.0015	0.00026	<0.0013	<0.0005	<0.0002	<0.00013	<0.0015	<0.00013	<0.000075	<0.000075	<0.0013	<0.00015		
			Subslab	0.02	<0.05	<1	<0.26	0.3	0.052	<0.26	<0.1	<0.04	<0.026	<0.3	<0.026	<0.015	<0.015	<0.26	<0.03		
SV14	2018-09-12	0.85	Unattenuated	-	<2	<40	<10	12	<1	<10	<4	<1.6	<1	1230	<1	<0.6	7.44	<10	<1.2		
			Outdoor Exposure	0.0001	<0.0002	<0.004	<0.001	0.0012	<0.0001	<0.001	<0.0004	<0.00016	<0.0001	0.123	<0.0001	<0.00006	0.000744	<0.001	<0.00012		
			Subslab	0.02	<0.04	<0.8	<0.2	0.24	<0.02	<0.2	<0.08	<0.032	<0.02	24.6	<0.02	<0.012	0.1488	<0.2	<0.024		
SV15	2018-09-12	0.85	Unattenuated	-	<2	<41	<10	18	<1	<10	<4.1	<1.6	<1	7190	<1	<0.61	896	23	<1.2		
			Outdoor Exposure	0.0001	<0.0002	<0.0041	<0.001	0.0018	<0.0001	<0.001	<0.00041	<0.00016	<0.0001	0.719	<0.0001	<0.000061	0.0896	0.0023	<0.00012		
			Subslab	0.02	<0.04	<0.82	<0.2	0.36	<0.02	<0.2	<0.082	<0.032	<0.02	143.8	<0.02	<0.0122	17.92	0.46	<0.024		
SV16	2018-09-12	0.85	Unattenuated	-	<2.3	<45	<11	170	24.2	<100	15.8	<1.8	<1.1	<14	<1.1	<1.4	57	<11	250		
			Outdoor Exposure	0.0001	<0.00023	<0.0045	<0.0011	0.017	0.00242	<0.01	0.00158	<0.00018	<0.00011	<0.0014	<0.00011	<0.00014	0.0057	<0.0011	0.025		
			Subslab	0.02	<0.046	<0.9	<0.22	3.4	0.484	<2	0.316	<0.036	<0.022	<0.28	<0.022	<0.028	1.14	<0.22	5		
SV17	2018-09-12	0.85	Unattenuated	-	<2.5	<50	<13	67	<1.3	<20	<15	<2	<1.3	<15	<1.3	<0.75	10.5	<13	19.3		
			Outdoor Exposure	0.0001	<0.00025	<0.005	<0.0013	0.0067	<0.00013	<0.002	<0.0015	<0.0002	<0.00013	<0.0015	<0.00013	<0.000075	0.00105	<0.0013	0.00193		
			Subslab	0.02	<0.05	<1	<0.26	1.34	<0.026	<0.4	<0.3	<0.04	<0.026	<0.3	<0.026	<0.015	0.21	<0.26	0.386		
SV18	2018-09-12	0.85	Unattenuated	-	<1.9	<37	<9.3	157	5.73	<9.3	<0.93	<1.5	<3.7	<11	<0.93	<1.1	<0.56	<9.3	<1.1		
			Outdoor Exposure	0.0001	<0.00019	<0.0037	<0.00093	0.0157	0.000573	<0.00093	<0.00093	<0.00015	<0.00037	<0.0011	<0.00093	<0.00011	<0.000056	<0.00093	<0.00011		
			Subslab	0.02	<0.038	<0.74	<0.186	3.14	0.1146	<0.186	<0.0186	<0.03	<0.074	<0.22	<0.0186	<0.022	<0.0112	<0.186	<0.022		
Z03 (Dup of SV18)	2018-09-12	0.85	Unattenuated	-	<1.7	<34	<8.6	179	6.69	<8.6	<0.86	<1.4	<0.75	<10	<0.86	<1	<0.52	<8.6	<1		
			Outdoor Exposure	0.0001	<0.00017	<0.0034	<0.00086	0.0179	0.000669	<0.00086	<0.00086	<0.00014	<0.00045	<0.001	<0.000086	<0.0001	<0.000052	<0.00086	<0.0001		
			Subslab	0.02	<0.034	<0.68	<0.172	3.58	0.1338	<0.172	<0.0172	<0.028	<0.9	<0.2	<0.0172	<0.02	<0.0104	<0.172	<0.02		
BH02M	2019-03-16	1.2	Unattenuated	-	-	-	-	-	-	-	-	-	-	<15	-	-	<0.13	-	-		
			Outdoor Exposure	0.0001	-	-	-	-	-	-	-	-	-	-	-	<0.0015	-	-	<0.000013	-	-
			Subslab	0.02	-	-	-	-	-	-	-	-	-	-	-	<0.3	-	-	<0.0026	-	-



- Site Boundary (Approximate)
- Areas of Environmental Concern - Soil**
- AEC 1 (East) - Metals impacts in the top 1.5m
- - - AEC 1 (West) - Potential metals impacts in the top 1.5m
- AEC 2 - Confirmed extent of metals impacts between 0.0m and 5.5m
- - - AEC 2 - Possible extent as shown on 1912 Fire Insurance Plan
- - - AEC 2b - High metals concentrations with some TCLP exceedances
- - - AEC 3 - Mostly shallow hydrocarbon (HEPH) impacts
- - - High PAH concentrations



Ortho Image and Parcel Boundary from The City of Vancouver's Open Data Catalogue

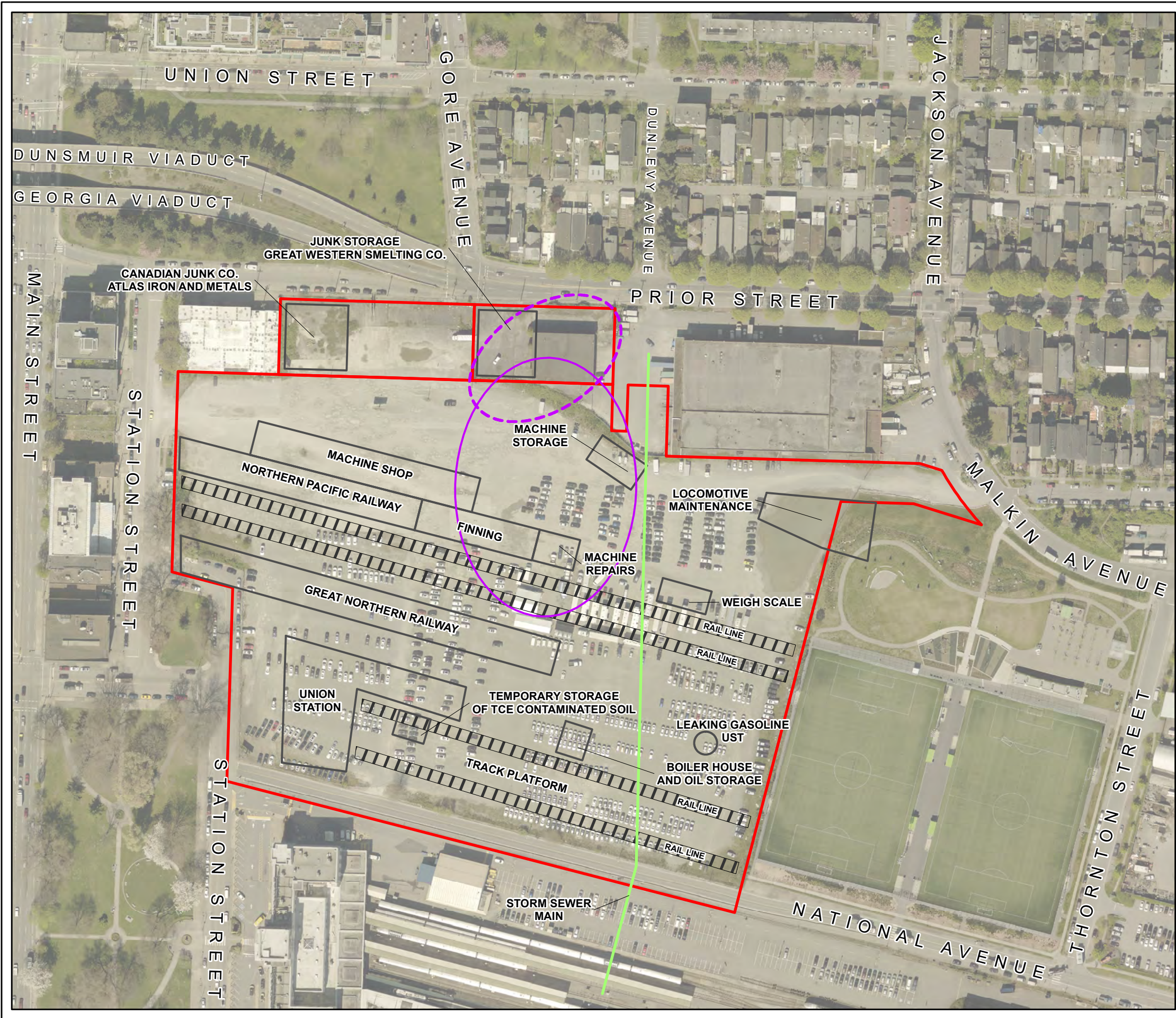
SOIL AREAS OF ENVIRONMENTAL CONCERN

250 and 310 Prior Street and 1002 Station Street, Vancouver, BC

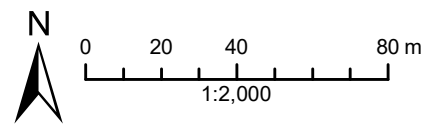
PROVIDENCE HEALTHCARE

	File No.:	Date:	Dwg No.:	Drawn by:	FIGURE 20
	5355-01.01	MAR 2019	53550101-F201	DPL	

Original in colour



- Site Boundary (Approximate)
- Areas of Environmental Concern - Groundwater
- AEC 2 - PAH exceedances
- - - AEC 2 - Potential metals exceedances



Ortho Image and Parcel Boundary from The City of Vancouver's Open Data Catalogue

GROUNDWATER AREAS OF ENVIRONMENTAL CONCERN

250 and 310 Prior Street and 1002 Station Street, Vancouver, BC

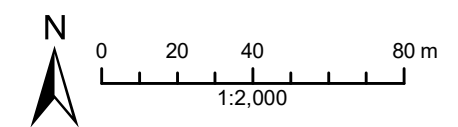
PROVIDENCE HEALTHCARE

	File No.:	Date:	Dwg No.:	Drawn by:	FIGURE 21
	5355-01.01	MAR 2019	53550101-F211	DPL	

Original in colour




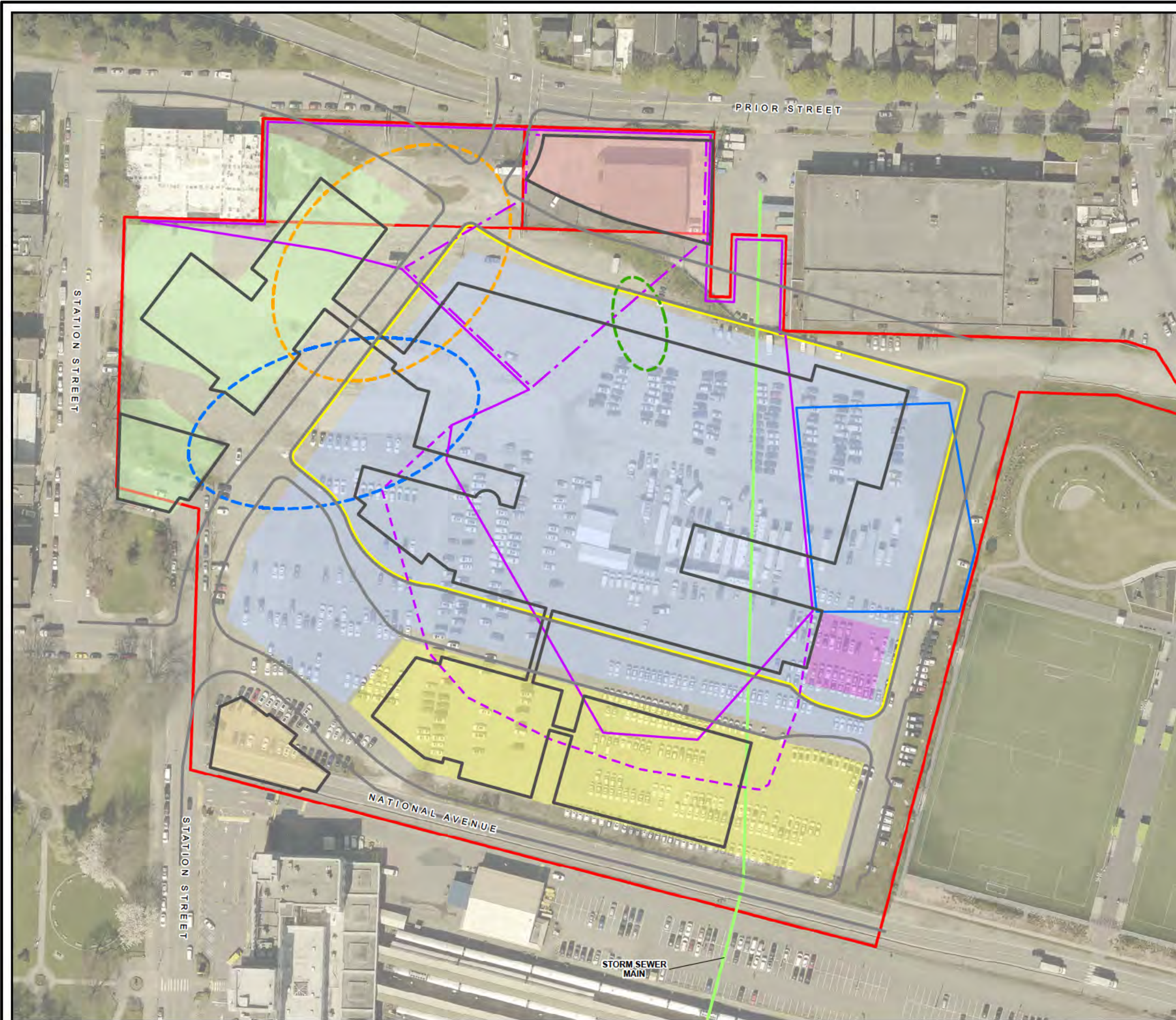
- Site Boundary (Approximate)
- Areas of Environmental Concern - Vapour
- AEC 3 - Vapour Impacts



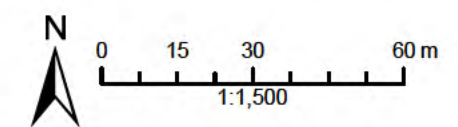
Ortho Image and Parcel Boundary from The City of Vancouver's Open Data Catalogue

VAPOUR AREAS OF ENVIRONMENTAL CONCERN
250 and 310 Prior Street and 1002 Station Street, Vancouver, BC

PROVIDENCE HEALTHCARE				
	File No.:	Date:	Dwg No.:	Drawn by:
ENVIRONMENTAL CONSULTANTS	5355-01.01	MAR 2019	53550101-F221	DPL
				FIGURE 22



- Site Boundary (Approximate)
 - Proposed Building
 - Proposed Road
 - Proposed Hospital (U/G Parking) Footprint
 - Health Campus
 - Clinical Support and Research Centre
 - Energy Centre
 - North Precinct
 - South Precinct
 - West Precinct
- Areas of Environmental Concern - Soil**
- AEC 1 (East) - Metals impacts in the top 1.5m
 - - - AEC 1 (West) - Potential metals impacts in the top 1.5m
 - AEC 2 - Confirmed extent of metals impacts between 0.0m and 5.5m
 - - - AEC 2 - Possible extent as shown on 1912 Fire Insurance Plan
 - · - · - AEC 2b - High metals concentrations with some TCLP exceedances
 - - - AEC 3 - Mostly shallow hydrocarbon (HEPH) impacts
 - · - · - High PAH concentrations



Ortho Image and Parcel Boundary from The City of Vancouver's Open Data Catalogue

SOIL CONTAMINATION WITH RESPECT TO THE FUTURE DEVELOPMENT

250 and 310 Prior Street and 1002 Station Street, Vancouver, BC

PROVIDENCE HEALTHCARE

	File No.:	Date:	Dwg No.:	Drawn by:	FIGURE 26
	5355-01.01	MAR 2019	53550101-F261	DPL	

Original in colour

Appendix 1
Current Title Information



TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$1074366

2020-02-04, 09:33:37

Requestor: Carla Shaw

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN****

Land Title District	VANCOUVER
Land Title Office	VANCOUVER
Title Number	CA4888135
From Title Number	BW133973
Application Received	2015-12-18
Application Entered	2016-01-04
Registered Owner in Fee Simple	
Registered Owner/Mailing Address:	PROVIDENCE HEALTH CARE SOCIETY, INC.NO. S41359 1081 BURRARD STREET VANCOUVER, BC V6Z 1Y6
Taxation Authority	Vancouver, City of
Description of Land	
Parcel Identifier:	010-813-217
Legal Description:	LOT 19 DISTRICT LOTS 181, 196 AND 2037 PLAN 6780
Legal Notations	
	NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA4888141 FILED 2015-12-18
Charges, Liens and Interests	NONE
Duplicate Indefeasible Title	NONE OUTSTANDING
Transfers	NONE
Pending Applications	NONE

TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$43286000

2020-02-04, 09:33:38

Requestor: Carla Shaw

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN****

Land Title District

Land Title Office

VANCOUVER

VANCOUVER

Title Number

From Title Number

CA4888136

BW133974

Application Received

2015-12-18

Application Entered

2016-01-04

Registered Owner in Fee Simple

Registered Owner/Mailing Address:

PROVIDENCE HEALTH CARE SOCIETY, INC.NO. S41359
1081 BURRARD STREET
VANCOUVER, BC
V6Z 1Y6

Taxation Authority

Vancouver, City of

Description of Land

Parcel Identifier:

018-550-185

Legal Description:

LOT A DISTRICT LOTS 196 AND 2037 PLAN LMP14138

Legal Notations

NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA4888141
FILED 2015-12-18

Charges, Liens and Interests

Nature:

RESERVATION

Registration Number:

749M

Registration Date and Time:

1935-10-10 13:15

Registered Owner:

CITY OF VANCOUVER

Remarks:

INTER ALIA
SEE 23356I

Nature:

RESERVATION

Registration Number:

1118M

Registration Date and Time:

1935-12-17 13:30

Registered Owner:

CITY OF VANCOUVER

Remarks:

INTER ALIA
SEE 23356I

TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$43286000

2020-02-04, 09:33:38

Requestor: Carla Shaw

Nature: EASEMENT
Registration Number: 15517M
Registration Date and Time: 1939-11-28 14:06
Registered Owner: CITY OF VANCOUVER
Remarks: INTER ALIA
AS IN SKETCH ANNEXED

Nature: EASEMENT AND INDEMNITY AGREEMENT
Registration Number: GC64088
Registration Date and Time: 1989-05-11 13:27
Registered Owner: CITY OF VANCOUVER
Remarks: EXTENDED BY BG466224

Nature: COVENANT
Registration Number: BG466237
Registration Date and Time: 1993-11-29 11:58
Registered Owner: CITY OF VANCOUVER
Remarks: L.T.A. SEC. 215
SEE BG466234
CLAUSE 4.2

Nature: EASEMENT AND INDEMNITY AGREEMENT
Registration Number: BG466224
Registration Date and Time: 1993-12-29 11:56
Registered Owner: CITY OF VANCOUVER
Remarks: EXTENSION OF GC64088

Nature: STATUTORY RIGHT OF WAY
Registration Number: BG466230
Registration Date and Time: 1993-12-29 11:57
Registered Owner: CITY OF VANCOUVER
Remarks: PART IN PLAN LMP14139

Nature: STATUTORY RIGHT OF WAY
Registration Number: BG466232
Registration Date and Time: 1993-12-29 11:57
Registered Owner: CITY OF VANCOUVER
Remarks: PART IN PLAN LMP14140

Nature: COVENANT
Registration Number: BG466234
Registration Date and Time: 1993-12-29 11:58
Registered Owner: CITY OF VANCOUVER
Remarks: L.T.A. SEC. 215
CLAUSE 2.1

TITLE SEARCH PRINT

2020-02-04, 09:33:38

File Reference: 5355-01.02

Requestor: Carla Shaw

Declared Value \$43286000

Nature:	COVENANT
Registration Number:	BG466235
Registration Date and Time:	1993-12-29 11:58
Registered Owner:	CITY OF VANCOUVER
Remarks:	L.T.A. SEC. 215 SEE BG466234 CLAUSE 3.1

Nature:	COVENANT
Registration Number:	BG466236
Registration Date and Time:	1993-12-29 11:58
Registered Owner:	CITY OF VANCOUVER
Remarks:	L.T.A. SEC. 215 SEE BG466234 CLAUSE 3.2

Nature:	STATUTORY RIGHT OF WAY
Registration Number:	BL119275
Registration Date and Time:	1997-04-07 14:16
Registered Owner:	CITY OF VANCOUVER
Remarks:	PLAN LMP32583

Nature:	COVENANT
Registration Number:	BL119277
Registration Date and Time:	1997-04-07 14:17
Registered Owner:	CITY OF VANCOUVER

Nature:	STATUTORY RIGHT OF WAY
Registration Number:	BL119279
Registration Date and Time:	1997-04-07 14:17
Registered Owner:	CITY OF VANCOUVER

Nature:	EQUITABLE CHARGE
Registration Number:	BL119281
Registration Date and Time:	1997-04-07 14:17
Registered Owner:	CITY OF VANCOUVER

Duplicate Infeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$1074366

2020-02-04, 09:33:38

Requestor: Carla Shaw

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN****

Land Title District VANCOUVER
 Land Title Office VANCOUVER

Title Number CA4888137
 From Title Number BW133971

Application Received 2015-12-18

Application Entered 2016-01-04

Registered Owner in Fee Simple
 Registered Owner/Mailing Address: PROVIDENCE HEALTH CARE SOCIETY, INC.NO. S41359
 1081 BURRARD STREET
 VANCOUVER, BC
 V6Z 1Y6

Taxation Authority Vancouver, City of

Description of Land
 Parcel Identifier: 008-776-300
 Legal Description:
 LOT C BLOCKS 15 TO 18 DISTRICT LOTS 196 AND 2037 PLAN 12884

Legal Notations
 NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA4888141
 FILED 2015-12-18

Charges, Liens and Interests NONE

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$1074366

2020-02-04, 09:33:38

Requestor: Carla Shaw

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN****

Land Title District VANCOUVER
 Land Title Office VANCOUVER

Title Number CA4888138
 From Title Number BW133972

Application Received 2015-12-18

Application Entered 2016-01-04

Registered Owner in Fee Simple
 Registered Owner/Mailing Address: PROVIDENCE HEALTH CARE SOCIETY, INC.NO. S41359
 1081 BURRARD STREET
 VANCOUVER, BC
 V6Z 1Y6

Taxation Authority Vancouver, City of

Description of Land
 Parcel Identifier: 008-776-326
 Legal Description:
 LOT D BLOCKS 15 TO 18 DISTRICT LOTS 196 AND 2037 PLAN 12884

Legal Notations
 NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA4888141
 FILED 2015-12-18

Charges, Liens and Interests NONE

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$1049000

2020-02-04, 09:33:39

Requestor: Carla Shaw

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN****

Land Title District

Land Title Office

VANCOUVER

VANCOUVER

Title Number

From Title Number

CA4888139

BW133970

Application Received

2015-12-18

Application Entered

2016-01-04

Registered Owner in Fee Simple

Registered Owner/Mailing Address:

PROVIDENCE HEALTH CARE SOCIETY, INC.NO. S41359
1081 BURRARD STREET
VANCOUVER, BC
V6Z 1Y6

Taxation Authority

Vancouver, City of

Description of Land

Parcel Identifier:

008-126-780

Legal Description:

LOT E DISTRICT LOTS 196 AND 2037 PLAN 13449

Legal Notations

NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA4888141
FILED 2015-12-18

Charges, Liens and Interests

Nature:

STATUTORY RIGHT OF WAY

Registration Number:

BH79201A

Registration Date and Time:

1994-03-08 13:31

Registered Owner:

CITY OF VANCOUVER

Remarks:

INTER ALIA
PART IN PLAN LMP15416

Nature:

OPTION TO PURCHASE

Registration Number:

BR11537

Registration Date and Time:

2001-01-18 15:04

Registered Owner:

CITY OF VANCOUVER

Remarks:

INTER ALIA
PART IN PLAN LMP48594

TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$1049000

2020-02-04, 09:33:39

Requestor: Carla Shaw

Nature:	COVENANT
Registration Number:	BR11538
Registration Date and Time:	2001-01-18 15:04
Registered Owner:	CITY OF VANCOUVER
Remarks:	INTER ALIA

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT

2020-02-04, 09:33:39

File Reference: 5355-01.02

Requestor: Carla Shaw

Declared Value \$2257900

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN****

Land Title District

VANCOUVER

Land Title Office

VANCOUVER

Title Number

CA4888140

From Title Number

BW133969

Application Received

2015-12-18

Application Entered

2016-01-04

Registered Owner in Fee Simple

Registered Owner/Mailing Address:

PROVIDENCE HEALTH CARE SOCIETY, INC.NO. S41359
1081 BURRARD STREET
VANCOUVER, BC
V6Z 1Y6

Taxation Authority

Vancouver, City of

Description of Land

Parcel Identifier:

008-126-798

Legal Description:

LOT F DISTRICT LOTS 196 AND 2037 PLAN 13449

Legal Notations

NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA4888141
FILED 2015-12-18

Charges, Liens and Interests

Nature:

STATUTORY RIGHT OF WAY

Registration Number:

BH79201A

Registration Date and Time:

1994-03-08 13:31

Registered Owner:

CITY OF VANCOUVER

Remarks:

INTER ALIA
PART IN PLAN LMP15416

Nature:

OPTION TO PURCHASE

Registration Number:

BR11537

Registration Date and Time:

2001-01-18 15:04

Registered Owner:

CITY OF VANCOUVER

Remarks:

INTER ALIA
PART IN PLAN LMP48594

TITLE SEARCH PRINT

File Reference: 5355-01.02

Declared Value \$2257900

2020-02-04, 09:33:39

Requestor: Carla Shaw

Nature:	COVENANT
Registration Number:	BR11538
Registration Date and Time:	2001-01-18 15:04
Registered Owner:	CITY OF VANCOUVER
Remarks:	INTER ALIA

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

Appendix 2
PGL Standard Methods



Appendix 3

Confirmation of Remediation at 370 and 456 Prior Street





July 22, 2015

Mr. Steve Lippman
 456 Prior Street Holdings Ltd.
 4th Floor – 52A Powell Street
 Vancouver, BC V6A 1E7

Dear Mr. Lippman:

**Re: Report of Findings – Confirmation of Remediation
 370 and 456 Prior Street, Vancouver, BC
 Project No. 12349**

This letter report presents the findings of a KEYSTONE ENVIRONMENTAL™ Confirmation of Remediation program (COR) prepared for the properties located at 370 and 456 Prior Street, in the City of Vancouver, BC (the Site)¹. It is understood that this report will be used in conjunction with the potential divestment of the Site.

1. BACKGROUND

Keystone Environmental conducted a Phase I and II ESA on the properties listed as 370 and 456 Prior Street in May and August of 2014, respectively.

The Phase I ESA indicated that the Site and area in the immediate vicinity of the Site was occupied by a former shingle manufacturer in circa 1910. From the early 1920s, or earlier, to the mid-1940s, a former building was located on the west portion of 436 Prior Street (currently listed as 456 Prior Street). Historical records indicated that the former building was occupied by a contractor’s warehouse (Grant Smith & Co.) and a former logging supply operation (F & F Equipment). In the late 1940s, the former building was removed and the west and central portions of the existing warehouse were constructed. The east portion of the existing warehouse was added in the late 1950s/early 1960s. A former rail spur was located on the south perimeter of the Site, adjacent to the south of the existing warehouse, from the late 1940s to the mid-1970s. The rail spur was removed in the late 1970s, and the Site has remained relatively unchanged since the 1970s.

¹ A portion of the City of Vancouver property listed as 410 Prior Street was also remediated as a component of this program due to off-Site migration of hydrocarbon contamination.

The Phase I ESA identified the following areas of potential environmental concern (APECs):

- **APEC 1** – Fill Material of unknown origin and quality.
- **APEC 2** – Potential for heating oil and/or other underground storage tanks (USTs).
- **APEC 3** – Off-Site former smelting and metal operations at 310 Prior Street from the 1930s to the 1960s (adjacent to the west of the Site).
- **APEC 4** – Off-Site former ink manufacturing operation at 496 Prior Street from the 1930s to the 1960s (adjacent to the east of the Site).
- **APEC 5** – Off-Site former rail yard at 1002 Station Street from the 1920s to the 1980s (adjacent to the south-southwest of the Site).

During the Phase I ESA Site reconnaissance, two cut-off metal pipes (potentially indicative of vent pipes) and a circular metal cover (indicative of a fill port) were observed on the northwest side of the building. A ground penetrating radar scan conducted as part of the Phase II ESA identified a subsurface anomaly (consistent of the size and shape of an underground storage tank (UST)) on the northwest side of the building.

The Phase II ESA included the drilling of seven boreholes completed as groundwater monitoring wells and the sampling of seven groundwater monitoring wells. Hydrocarbon contamination, in both soil and groundwater, was identified on the south side of the suspect UST.

In February 2015, Keystone Environmental supervised the removal of an approximately 13,000 L UST, containing approximately 520 L of a mix of gasoline and water. Approximately, 30 m³ of suspect hydrocarbon contaminated soil located around the UST was also removed. The excavation was advanced until soil headspace vapours were deemed to be low and odorous soil was not observed. The final excavation extent was approximately 8 m by 6 m and 2.7 m deep. Suspect soil was removed off-site for disposal at the Sumas Bioremediation (Sumas) facility, in Burnaby BC. A copy of the UST removal report is attached in Appendix A.

Following the UST removal and soil remediation, additional drilling was conducted to investigate the groundwater and delineate the residual soil contamination. Nine boreholes, eight of which were installed as monitoring wells, were advanced to the north, northeast, southeast, south, southwest and northwest of the excavation extent during two separate drilling events. Soil analytical results exceeding the CSR IL/CL and AW_M standards were identified at MW15-9 and MW15-17 and groundwater concentrations exceeding the CSR AW_M standards were identified at MW15-8 and MW15-9. The sample locations are presented on Figure 1 and the soil and groundwater analytical results are presented on Figures 2 and 3.

Additional investigation of the aquifer hydraulic conductivity was conducted as part of this confirmation of remediation and supplemental investigation, therefore the applicability of DW is discussed in detail in Section 3.2. The previous results were compared to the CSR IL/CL and AW_M standards only and the table below summarizes the exceedances that were retained as Areas of Environmental Concern (AECs):

Table 1.1 Analytical results above the CSR IL/CL and AWM standards

APEC/AEC	Location (depth in mbg for the soil sample)	Soil (mg/kg)	Groundwater (ug/L)
1. Fill	MW14-5 (0.6)	Copper = 285 (IL/CL = 90-250) Zinc = 409 (IL/CL = 150-600)	-
	MW14-6 (0.8)	Zinc = 435 (IL/CL = 150-600)	-
	BH15-19 (0.6)	Copper = 2,160 (IL/CL = 90-250) Zinc = 1,210 (IL/CL = 150-600)	-
2. UST	MW14-4 (1.5)	VH = 210 (CL/IL = 200)	LEPHw = 3,300 > 500 AW _M naphthalene = 110 > 10 AW _M VPH = 3,300 > 200 AW _M
	MW15-8	-	LEPHw = 1,800 > 500 AW _M
	MW15-9 (1.8)	Ethylbenzene = 97 (CL/IL = 20) Xylenes = 330 (CL/IL = 50) VH = 2,200 (CL/IL = 200) VPH = 1,800 (CL/IL = 200)	LEPHw = 4,000 > 500 AW _M naphthalene = 190 > 10 AW _M VPH = 3,400 > 200 AW _M
	MW15-17 (1.5)	VH = 870 (CL/IL = 200) VPH = 860 (CL/IL = 200)	-

Italic concentration exceeds IL standards
BTEX – Benzene, Toluene, Ethylbenzene, Xylenes
LEPH – Light Extractable Petroleum Hydrocarbons
HEPH – Heavy Extractable Petroleum Hydrocarbons
* standards are pH dependent

Bold concentration exceeds CL standards
VPH – Volatile Petroleum Hydrocarbons
PAH – Polycyclic Aromatic Hydrocarbon
No exceedances or sample not analyzed
AEC – Area of Environmental Concern

Therefore, APECs 1 and 2 were retained as areas of environmental concern (AEC) requiring further work. The Site and Sample Location Plan is presented on Figure 1. Investigation results are included in Tables 1 through 3 for soil and 4 through 6 for groundwater and on Figures 2 (soil) and 3 (groundwater). Previous documents are included in Appendix A.

2. STUDY LIMITATIONS

Findings presented in this report are based upon the results of a field investigation including soil, groundwater and soil vapour sample analyses. Geologic observations and analytical results reflect conditions encountered at specific test locations. Site conditions (geologic, hydrogeological, and chemical characterization) may vary from that extrapolated from the data collected during this investigation. Consequently, while findings and conclusions documented in this report have been prepared in a manner consistent with that level of care and skill normally exercised by other members of the environmental science and engineering profession practising under similar circumstances in the area at the time of the performance of the work, this report is not intended, nor is it able to provide a totally comprehensive review of present or past site environmental conditions.

This report has been prepared solely for the internal use of 456 Prior Street Holdings Ltd., pursuant to the agreement between Keystone Environmental Ltd. and 456 Prior Street Holdings Ltd. A copy of the general terms and conditions associated with this agreement is attached. By using the report, 456 Prior Street Holdings Ltd. agrees that they will review and use the report in its entirety. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibility of such parties. Keystone Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report.

3. APPLICABLE STANDARDS

The applicable provincial regulations used for comparison of analytical results are contained in the following documents:

- *Environmental Management Act (EMA)*, ([SBC 2003], Chapter 53 assented to March 23, 2003).
- Contaminated Sites Regulation (CSR), 375/96 O.C. 1480/96 including amendments up to B.C. Reg. 375/96 O.C. 1480/96 and M271/2004, includes amendments up to B.C. Regulation 4/2014, January 31, 2014.
- Hazardous Waste Regulation (HWR) (BC Reg. 63/88 O.C. 268/88, including amendments up to B.C. Reg. 63/2009, April 1, 2009).

3.1 Soil Standards

The Contaminated Sites Regulation (CSR) provides generic and matrix numerical soil standards for different land use categories. The matrix numerical soil standards provide standards for potential contaminants based on several site-specific factors (e.g., intake of contaminated soil, toxicity to soil invertebrates and plants). To determine the appropriate standard for a contaminant, the applicable factors for a site are first selected. The lowest standard of those for applicable factors for the site is then defined as the standard that will apply.

The Site is current zoned and used for industrial purposes. Future use of the Site may include commercial uses; therefore the CSR standards for industrial land use (IL) and commercial land use (CL) have been applied.

3.2 Groundwater Standards

The CSR contains requirements to ensure that groundwater at a site is suitable for current and future uses and is of adequate quality to protect adjacent water uses.

Aquatic Water Use Standards – Fresh and Marine Water

The CSR Aquatic Life Water Use (AW) standards apply to groundwater at sites that are within 500 m or less of a surface water body containing aquatic life, or where there is the potential for contaminated groundwater to reach within 500 m of a surface water body containing aquatic life. The east end of False Creek (the closest surface water body) is located approximately 550 m to the west southwest of the Site at its closest point. False Creek is a marine aquatic environment; therefore, the Marine (AW_M) aquatic life standard has been applied to the Site. In addition the former False Creek high water mark is located adjacent to the south of the Site as shown on Figure 1.

Drinking Water Use Standards

The evaluation of whether drinking water (DW) standards are applicable is conducted in two stages, first for the current situation and then for the potential future situation. The answer to both the current and the future evaluation must be “no” to eliminate the application of the DW standards to the Site.

Current Use: For current use evaluation, the CSR DW standards are applicable at a site where the groundwater or surface water at or near the site (within 500 m of the site or the leading edge of a groundwater contamination source or, if groundwater flow direction has been demonstrated, 100 m up-gradient or 500 m down-gradient of the site or contamination source) is currently used for drinking water.

Future Use – Part 1: The potential for the site to support drinking water use is determined under this scenario. If there is a suitable aquifer (hydraulic conductivity greater than 1×10^{-6} m/s and aquifer yield greater than 1.3 L/min) present then there is the potential for DW standards to apply and further evaluation is required. If there is not a suitable aquifer present, then DW standards do not apply.

Future Use – Part 2: If the answer for either of the following two questions is “yes,” then DW standards do not apply to the site:

- If the natural quality of groundwater in the aquifer is unsuitable for drinking water use (total dissolved solids (TDS) are greater than 4,000 mg/L, or is contained within organic soils or muskeg).
- If there is a confining geological unit that adequately protects the aquifer (greater than or equal to 5 m thick, bulk hydraulic conductivity less than or equal to 1×10^{-7} m/s, relatively uniform and free of fractures, continuous across the extent and predicted migration pathway of the shallow subsurface contamination, and the lower 5 m has not been penetrated by contamination from the above units).

In regards to current use consideration, the following states the rationale why DW standards for current use are not applicable to the Site:

- No current use of the groundwater for drinking water purposes within 500 m of the Site (Water wells figure included in Appendix B).
- The Site and surrounding area are serviced by a municipal water supply that does not rely on groundwater.

In regards to future use consideration, the following multiple lines of evidence assist with the rationale for why DW standards are considered unlikely to apply:

- The south portion of the Site contains fill of unknown origin and has a long history of industrial use with multiple sources and multiple landowners and is contiguous with the wide area fill confirmed by the MOE for the False Creek Area as shown in the attached figure from the MOE.

- The perched artificial aquifer identified in historical fill material of known poor quality is less than 2 metre in depth (See Photograph 2 in Appendix C for picture of False Creek fill material identified at the Site).
- An aquifer was not identified below the Site according to the BC Water Resource Atlas (Water wells figure included in Appendix B).

Hydrogeological data for the till unit from the Site and from nearby sites, show hydraulic conductivity below 1×10^{-6} as outlined in MOE Technical Guidance Document 6 (TG6), which is considered insufficient permeability to allow suitable extraction for drinking water use (Slug test results included in Appendix B). The till unit is underlain with Sandstone Bedrock.

The following support documents are included in Appendix B:

- A copy of the figure provided in the determination issued by the Ministry of Environment in December 13, 2012 for MOE Site ID: 12722 showing Area Wide Historical Fill material in the area that is contiguous with our Site.
- A copy of the figure produced from the Contaminated Sites Approved Professionals Society (CSAP Society) website showing properties where DW was not considered applicable for issued instruments in the vicinity of the Site (consulted on July 17, 2015).
- A copy of the figure produced from the BC Water Atlas Map (consulted on July 20, 2015) with a 500 m radius from the Site and the water wells and aquifer layers turned on (water wells and an aquifer were not identified in the vicinity of the Site).
- The borehole log for MW15-19 and the slug test results conducted on June 16, 2015.

Therefore, based on the information provided above, DW standards are considered unlikely to apply to the Site².

Irrigation and Livestock Water Use Standards

Irrigation (IW) and livestock (LW) watering water use standards apply to groundwater located at sites with agricultural land use or are located within a provincial Agricultural Land Reserve (ALR), unless the geological unit where contamination occurs has a hydraulic conductivity less than 10^{-6} m/s or if wells or points of diversion used for livestock watering or irrigation purposes are located greater than 500 m of the Site.

The Site is not located within the ALR. Agricultural land and operations, and irrigation and livestock water wells were not identified within 500 m of the Site. Therefore, the IW and LW standards are not considered applicable to the Site.

² Additional investigation of the hydraulic conductivity and submission for a Drinking Water Determination may be required prior to an application for a Ministry Instrument (if required).

3.3 Soil Vapour Standards

The September 2010 MOE *Technical Guidance Document 4: Vapour Investigation and Remediation*, recommends that vapour be investigated whenever there are either volatile or semi-volatile potential constituents of concern from Schedule 2 activities that are listed in Schedule 11 of the CSR, or if a potential vapour exposure pathway for constituents of concern (COCs) exists from neighbouring properties within 30 m.

The Site is current zoned and used for industrial purposes. Future use of the Site may include commercial uses; therefore the CSR standards for industrial land use (IL) and commercial land use (CL) have been applied.

4. SUPPLEMENTAL INVESTIGATION AND CONFIRMATION OF REMEDIATION

The scope of this work included soil and groundwater confirmation of remediation associated with AEC 1 and 2 and a vapour investigation³. The investigation and confirmation of remediation programs were conducted from June 1 through July 2, 2015.

For the purposes of the remedial excavation, the Site consists of two properties owned by 456 Prior Street Holdings Ltd. Inc. No. BC1017782 (370 and 456 Prior Street), and a portion of a City of Vancouver property (410 Prior Street) where hydrocarbon contamination associated with the underground storage tank (AEC 2) migrated to the City of Vancouver property. Notification of the off-Site migration of contamination was presented to the Ministry of Environment on February 3, 2015.

4.1 Scope of work

The investigation component scope of work included a preliminary hydrogeological investigation (discussed in Section 4.3 of this report) and soil vapour modeling and sampling (discussed in Section 4.4 of this report). The hydraulic conductivity testing purpose was to investigate Drinking Water standards applicability to the Site. The purpose of the modeling of vapour concentrations from worst-case scenario soil and groundwater investigation results was to conservatively identify the locations that required soil vapour sampling as a vapour investigation was not conducted during the Phase II ESA conducted for the Site.

The purpose of the confirmation of remediation was to remediate the constituents of concern identified in soil, groundwater and soil vapour. The scope of work of the confirmation of remediation consisted of the following tasks:

- Document the excavation and off-site disposal conducted by Sumas Remediation Services Inc. of soil exceeding the CSR IL/CL standards.
- Submit a Notification of Independent Remediation to the Ministry of Environment (NIR).

³ Vapour was not investigated as a component of the ESA II.

- Collect confirmatory soil samples and lithological information including colour, soil type, moisture and organic headspace measurements from the walls and base of the remedial excavation areas, and submit the confirmatory soil samples for laboratory analyses.
- Collect post-remediation confirmatory groundwater samples.
- Collect post-remediation vapour samples.
- Document the results of the investigation and confirmation of remediation in this letter report.

4.2 Soil Remediation Activities

The soil remediation activities completed by excavator at the Site were carried out between June 1 through 4, 2015. The excavated soils were loaded into trucks for off-Site disposal at the Sumas facility, in Burnaby, BC.

Based on the confirmatory results, additional remedial excavation was conducted with the use of vacuum truck on June 25, 2015. The vacuum truck contents were also transported for off-Site disposal at Sumas. The remedial excavation location plan and the associated confirmatory soil sampling locations are presented on Figure 4. Remedial activities are discussed in the following sections.

It was anticipated that remediation of constituents of concern in groundwater and vapours exceeding the CSR AW_M or IL/CL standards would be completed by removal of source soils during the remedial excavation.

4.2.1 Soil Sampling Methodology

Wall and base confirmatory soil samples were collected by Keystone Environmental personnel from the bucket of the excavator or by hand when the excavation was less than 1.2 m in depth. Confirmatory samples were labelled and stored in laboratory supplied ice-filled coolers while in the field and then transported to Maxxam under chain of custody documentation. A second soil sample was collected at several locations and placed in a polyethylene bag for field screening purposes with the use of a photo-ionization instrument (PID).

4.2.2 Soil Quality Observations Field Measurements

The soil headspace vapour measurements ranged from 0 to 50 parts per million by volume (ppmv), which are not considered to be elevated. Above 75 ppm is typically considered elevated.

4.2.3 Confirmatory Soil Analytical Results

The following table summarizes the soil sample analyses conducted during this confirmation of remediation activities or identified investigation samples that were used as confirmatory samples. Although not discussed in this section, confirmatory samples collected during the UST removal are included with the confirmatory samples collected during this remedial excavation in Tables 7 through 8 and on Figure 4.

Table 4-1 Soil Sample Analyses

AEC	Sample Location	Analyses
AEC 1 – Fill Material	CS15-14 through CS15-23 and BH15-18	Copper and/or zinc
AEC 2 – UST	⁴ CS15-6, CS15-7, CS15-9, CS15-10, CS15-11, CS15-13 and MW15-17	LEPH, HEPH, PAHs, VPH and BTEX

BTEX – Benzene, Toluene, Ethylbenzene, Xylenes
LEPH – Light Extractable Petroleum Hydrocarbons
HEPH – Heavy Extractable Petroleum Hydrocarbons

VPH – Volatile Petroleum Hydrocarbons
PAH – Polycyclic Aromatic Hydrocarbon

Confirmatory soil analytical results are presented in Tables 7 and 8, and on Figure 4. The laboratory certificates of analyses are attached in Appendix F.

4.2.4 AEC 1 – Remedial Excavation of Fill Material

During the Phase II ESA copper and zinc were identified above the CSR IL/CL standards at MW14-4 and BH15-19 on the northern portion of 370 Prior Street and zinc was identified above the CSR CL/IL standard at MW14-6 on the south portion of 370 Prior Street. On June 3, 2015 a remedial excavation was conducted in the vicinity of MW14-6 (Excavation A) and on June 4, 2015 a remedial excavation was conducted in the vicinity of MW14-4 and BH15-19 (Excavation B).

Excavation A

Zinc exceeded the CSR IL standards at MW14-6 located on the southern boundary of 370 Prior Street. To remove the fill material exceeding the CSR IL standards at MW14-6 a remedial excavation was completed in the vicinity of MW14-6. At the conclusion of the remediation, four sidewall samples [CS15-14 (0.8) through CS15-17 (0.8)] and one base sample [CS15-18 (1.3)] were collected and analyzed for zinc. Confirmatory soil analytical results for zinc (516 ug/g) at CS15-14 (0.8) collected at the north sidewall was above the CSR IL and CL standards. The concentration of zinc at the remaining confirmatory soil samples were less than the CSR IL/CL standards.

During the initial excavation, the extent to the north (CS15-14) was limited by the storm line trench. Therefore, the excavator remediation was conducted as close as possible to the storm line with considerations to the utility integrity and health and safety. It was determined that if the soils on the north confirmatory wall exceeded the CSR IL /CL standards, further remediation would be conducted by vacuum excavation to maintain the integrity of the storm line.

Based on the residual exceedance at CS15-14 (located on the north wall of the excavation), on June 25, 2015, Badger Daylighting Inc. (Badger), of Vancouver, BC was on-Site to extend the remedial excavation to the north between the excavated area and the storm line with the

⁴ Samples CS15-1 through CS15-5 were collected during tank removal and the details are included in the attached tables 7 and 8 and on figure 4.

use of a vacuum truck. The excavation was extended by approximately 1 m to the north and sample CS15-23 (0.8) was collected to replace sample CS15-14 (0.8). The zinc analytical result at CS15-23 (0.8) was less than the CSR IL/CL standards, thus Excavation Area A has been remediated to comply with the CSR standards applicable to the Site.

The north, south, east and west walls at the final extent of Excavation A were approximately 7.5 by 4 m and the maximum depth was 1.3 mbg for an approximate volume of 40 m³. Confirmatory soil analytical results from Excavation Area A are presented in Tables 7 and 8, and on Figure 4. Laboratory analytical reports are attached in Appendix F.

Excavation B

Following the removal of the contaminated fill material from the vicinity of MW14-5 and BH15-19, four sidewall samples [CS15-19 (0.6) through CS15-21 (0.6)] and one base sample [CS15-22 (1.1)] were collected and analyzed for copper and zinc. The investigation sample BH15-18 (0.8) was used to determine the extent to the north. The west confirmatory sample was collected on the property line between the 370 Prior Street property and the adjacent City of Vancouver property. As the AEC is area wide fill material of unknown origin associated with False Creek infilling, chasing the fill material off-Site is not warranted as a component of this excavation. The Confirmatory soil analytical results were less than the CSR IL/CL standards in the other confirmatory samples; therefore, Excavation Area B has been remediated to comply with the CSR standards applicable to the Site.

The north, south, east and west walls at the final extent of Excavation B were approximately 9 by 4 m and the maximum depth was 1.1 mbg for an approximate volume of 40 m³. Confirmatory soil analytical results from Excavation Area B are presented in Tables 7 and 8, and on Figure 4. Laboratory analytical reports are attached in Appendix F.

4.2.5 AEC 2 – On-Site UST

A 13,000 L UST was decommissioned at the Site on February 3, 2015. The tank was suspected to have historically stored gasoline, and during the UST decommissioning a mix of gasoline and water was removed from the tank. The tank was observed in good condition. The tank was removed by Sumas and approximately 30 m³ of soils surrounding the tank was excavated and confirmatory soil samples CS15-1 through CS15-5 were collected at the time. Confirmatory samples analytical results were less than the CSR IL/CL standards. However, additional soil and groundwater hydrocarbon contamination likely associated with the former UST was identified in the confirmatory monitoring wells drilled at MW14-4, MW15-8, MW15-9 and MW15-17. Therefore; in June 2015 the remedial excavation was extended to remove the residual hydrocarbon contamination associated with the former UST.

Following the excavation of soils; confirmatory sidewall samples CS15-6 through CS15-12 and the confirmatory base sample CS15-7 (2.7) were collected and the sample from MW15-17 at 2.7 metres was used as an additional base confirmatory sample. Select confirmatory samples were submitted to the laboratory for light extractable petroleum hydrocarbons (LEPH), heavy extractable petroleum hydrocarbons (HEPH), naphthalene and benzene, toluene, ethylbenzene and xylenes (BTEX) and volatile petroleum hydrocarbons (VPH). The confirmatory analytical results were less than the CSR IL/CL standards.

The final extent to the west was limited by a storm line running north-south. The north, south, east and west walls at the final extent of UST Excavation were approximately 19.5 by 10 m, to a depth of 2.7 metres below grade, representing a volume⁵ of approximately 530 m³. The analytical results are presented on Tables 7 and 8 and on Figure 4. Laboratory analytical reports are attached in Appendix F.

4.2.6 Soil Disposal Summary

The volume of soil removed was estimated based on the measured area and depth of the excavation as shown on Figure 10. The inferred approximate volume of soil excavated and transported off-site to Sumas from the three excavation areas was 600 m³. This includes the volume of soil excavated from the Site during the previous UST pull in February 2015 and the area of the former UST. The total weight of soil claimed at the weigh scale at Sumas is 676.65 tonnes.

Typically, one cubic metre of soil is approximately equivalent to 1.3 to 1.5 tonnes in weight (m³) and it may vary according to the Site-specific type of soils. The fill material was mostly comprised by wood debris which is relatively lighter than silts and cobbles. Therefore, the estimated volume of soil removed in June 2015 based on measurements (520 m³) and tonnage reported by Sumas (676.65 tonnes) are close in comparison. A copy of the soil disposal summaries is attached at the end of the report in Appendix D.

4.2.7 Backfill

The excavation cavity was backfilled with imported river and Sechelt sand. Analytical results for LEPH, HEPH, polycyclic aromatic hydrocarbons (PAHs), VPH, BTEX and metals for the backfill soil sample BF15-1 were below the CSR IL/CL standards. Analytical results for the backfill sample are presented in Tables 9 and 10.

4.3 Groundwater Program

The groundwater program included the installation of three confirmatory monitoring wells (MW15-18 to MW15-20) with soil vapour attachments (SV15-18 to SV15-19) upon completion of the remedial excavation. The purpose of the post-remediation groundwater program was to confirm that groundwater contamination previously identified at the Site at MW14-4, MW15-8, MW15-9 and MW15-17 was remediated during the remedial excavation activities to meet the CSR AW_M standards. The purpose of the hydraulic testing was to investigate DW applicability to the Site. The location of the post-remedial groundwater monitoring wells is shown on Figure 5.

⁵ This area includes the February 2015 excavation and UST removal which calculates to a volume of about 80m³.

4.3.1 *Monitoring Well Construction and Sampling*

Monitoring wells were drilled and constructed on the Site by On-Track Drilling Inc. (On-track) of Coquitlam, BC. MW15-19 was drilled and constructed on June 11, 2015 and monitoring wells MW15-18 and MW15-20 on June 12, 2015.

The monitoring wells were constructed using hollow stem augers to remove sloughed soils and to provide a uniform filter sand pack thickness between the well screen and borehole walls. The monitoring well screen and casing pipe was lowered into the annulus of the hollow stem auger. Annular materials (filter sand and bentonite) were introduced to the hollow-stem auger as the auger was being slowly removed from the borehole. The depth of emplacement of the monitoring well screen was dependent on the depth of the apparent water table at each location and within specific strata to be assessed. The intent was to have the well screen intersect the groundwater table.

The monitoring well screens were 1.5 m long and had 0.25 mm slot width. The well pipe and screen were composed of 0.05 m diameter schedule 40 PVC. The solid PVC riser pipes extended from the top of the screen to the well head which was sealed with a J-Plug. Filter sand was placed as a filter pack around the well screen and to at least 0.3 m above the top of the screen. To provide a seal above the sand pack and reduce the potential for vertical migration of groundwater or infiltration of surface water into the well, bentonite chips were placed above the sand pack to a depth approximately 0.3 m below the surface grade. The monitoring wells were finished with flush mounted road boxes.

Following construction, the monitoring wells were monitored for water levels and well headspace vapour levels and were developed. MW15-19 was developed on June 12, 2015 and MW15-18 and MW15-20 were developed on June 16, 2015. Well development was conducted in preparation for groundwater sampling, by surging with high density polyethylene (HDPE) inertial lift tubing, one way valve, and a surge blocks prior to withdrawing a minimum of six times the well volume of water from the well, or developing the well to a dry condition three consecutive times.

Groundwater sampling at MW15-18 through MW15-20 was conducted on June 17 and June 25, 2015. Groundwater samples were collected by low flow sampling and inertial lift sampling techniques. A peristaltic pump with new, dedicated HDPE and silicone tubing was used with low flow sampling techniques to collect samples for the analysis of LEPHw, PAHs, VPHw, BTEX and/or dissolved metals. Inertial lift HDPE tubing and foot valve were used to collect samples for the analysis of VPHw and BTEX. Dissolved lead samples were field filtered using 0.45 micron filters.

Groundwater samples were placed in chilled coolers after sampling and for transport to Maxxam under standard chain of custody procedures. The samples collected at MW15-18 and MW15-19 were submitted for analyses of VPH, BTEX, LEPH and naphthalene. Samples from MW15-18 were also submitted for dissolved lead. Groundwater field Purge and Sample forms are included in Appendix E.

4.3.2 Groundwater Analytical Results

Analytical results for VPH, BTEX, LEPH and dissolved lead were less than the laboratory reported detection limits and therefore less than the CSR AW_M standards. Analytical results for naphthalene were less than the CSR AW_M standards. Analytical results are presented on Table 11 and Figure 5. Laboratory certificates are included in Appendix F.

4.3.3 Hydraulic Conductivity Testing

To evaluate the potential for future use, rising head slug/bail single well response tests were conducted in a groundwater monitoring well installed in the native silt unit below the fill material (MW15-17) on May 15, 2015. The hydraulic conductivity value of the silt unit from the slug test was 2.57×10^{-6} m/s just slightly above the 1×10^{-6} m/s outlined in MOE Technical Guidance Document 6 (TG6). A single well response pumping test was considered for this location since it is believed that the groundwater yield would not sustain continuous pumping through a long period of time at the Site. However, there were concerns regarding the integrity of this monitoring well due to issues faced during the drilling activities, such as (1) refusal during the first attempt and the drilling of a new borehole adjacent to the original one and (2) the use of solid stem auger technique. Therefore, the first results were not considered reliable as a preferential path or bridging of the monitoring well material could have occurred.

A new monitoring well was then installed within the native unit to replace MW15-17 and using hollow stem-technique at the post-remedial stage (MW15-19). Due to uncertainty of the results from MW15-17, replacement tests were conducted at the newly installed monitoring well (MW15-19).

The rising head slug/bail single well response tests was conducted twice at MW15-19 on June 16, 2015. This location is considered representative of the undisturbed native soil at the Site and surrounding areas. The recovery curve analyses portion of the test resulted in hydraulic conductivity values ranging from 1.21×10^{-7} m/s to 1.86×10^{-7} m/s. These results show that the till unit at the Site would likely not provide a typical well yield suitable to meet the requirements for a drinking water source as outlined in MOE TG6.

A copy of the borehole log for MW15-19 and the slug tests results are included in Appendix B.

4.4 Soil Vapour Program

4.4.1 Soil Vapour Well Installation and Sampling

Soil vapour wells SV15-18 to SV15-20 were installed in the same boreholes as groundwater monitoring wells MW15-18 to MW15-20, respectively. The soil vapour wells were constructed using a dedicated 15 cm stainless steel mesh Geoprobe[®] vapour screen and ¼-inch nylon tubing. The probe was placed into the borehole at depths of approximately 1.2 mbg. The probe was held in the centre of the open borehole while a filter sand pack was installed in the annular space surrounding the probe while the hollow stem augers were withdrawn. Bentonite was installed above and below the soil vapour probe, and was hydrated with water during

installation. A 0.3 to 0.6 m layer of bentonite chips was placed directly above and below the 30 cm sand pack and vapour probe to allow rapid hydration and a more effective seal within the soil vapour annular space.

SV15-18 was considered to be the worst case scenario based on the previous results; therefore, it was sampled on July 2, 2015. The soil vapour monitoring well was purged prior to sampling for approximately seven minutes. Following purging, a soil vapour sample was collected using laboratory calibrated pump and a thermal desorption. Isopropanol was used as a leak tracer to test the vapour well seal and sampling train. Soil Vapour field Purge and Sample forms are included in Appendix E.

4.4.2 Soil Vapour Results

4.4.2.1 Investigation Results - Modeling

To investigate AECs 1 (fill) and 2 (UST), analytical results for soil and groundwater from MW15-9 were modelled using calculations based in the Health Canada Detailed Quantitative Risk Assessment soil vapour modelling spreadsheet. The results from MW15-9 were considered the worst case scenario for investigating both APECs, since the highest concentrations of volatiles and semi-volatiles (including parameters listed in the CSAP Society gasoline list for fuels where available) were identified at this location.

Modeled results were then compared to the CSR IL/CL soil vapour standards. The depth of the soil sample at this location was 1.8 mbg and the depth to groundwater was approximately 1.5 mbg; therefore, the 1.5 m sample depth vapour attenuation factors (Table 2 of the MOE Technical Guidance 4) were applied to the calculated results. The modeled results are presented in comparison to the soil vapour CSR IL/CL standards below.

Table 4-2 Modeled Results from soil samples collected at 1.8 mbg at MW15-9

Well ID	Calculated Concentration ($\mu\text{g}/\text{m}^3$)	Predicted indoor concentration (CL/IL) VAF = 0.00034	Predicted outdoor concentration VAF = 0.0000012	CSR Standards	
				CL	IL
Benzene	816,710	278	1	3000	11500
Toluene	263,858	90	0.32	4	10
Ethylbenzene	16,710,924	5,682	20	15000	45000
Xylenes	35,096,472	11,933	42	3000	9000
VPHv	1,068,114,880,932,130	363,159,059,517	1,281,737,857	300	900
MTBE	29,224	10	0.04	9000	27000
Naphthalene	53,180	18	0.06	9	25

Italic concentration exceeds IL standards
VAF - Vapour attenuation Factor
BTEX – Benzene, Toluene, Ethylbenzene, Xylenes

Bold concentration exceeds CL standards
VPH – Volatile Petroleum Hydrocarbons
PAH – Polycyclic Aromatic Hydrocarbon

Modeled results are conservative. The non-attenuated calculated concentration of several constituents exceeded the applicable CSR IL/CL standards. Once the attenuation factors were applied the estimated indoor concentration of the constituents toluene, xylenes, VPHv and naphthalene exceeded the CSR IL/CL standards. The predicted indoor and outdoor air calculated concentrations for remaining constituents were less than the CSR IL/CL standards.

The concentrations were also modelled from groundwater and the results are presented in the following table:

Table 4-3 Modeled Results from groundwater samples collected at MW15-9

Well ID	Calculated Concentration (µg/m ³) --	Predicted indoor concentration (IL/CL) VAF = 0.00034	Predicted outdoor concentration VAF = 0.0000012	CSR Standards	
				CL	IL
VPHv	342000	116.3	0.00014	3000	11500
Benzene	272.4	0.093	0.0000001	4	10
Toluene	108.4	0.037	0.00000004	15000	45000
Ethylbenzene	805	0.27	0.0000003	3000	9000
Xylenes	569	0.19	0.0000002	300	900
Naphthalene	40	0.013	0.00000002	9	25
1,2 Dibromoethane	5	0.00186	0.00000000223	1	1
1,2 Dichloroethane	24	0.00819	0.00000000983	1	3.5
1,3-Butadiene	15050	5.11700	0.00000614040	6	20
MTBE	240	0.08160	0.00000009792	9000	27000

Italic concentration exceeds IL standards
VAF - Vapour attenuation Factor
BTEX – Benzene, Toluene, Ethylbenzene, Xylenes

Bold concentration exceeds CL standards
VPH – Volatile Petroleum Hydrocarbons
PAH – Polycyclic Aromatic Hydrocarbon

Modeled results are conservative. The non-attenuated calculated concentrations of several constituents when modelled from groundwater exceeded the CSR IL/CL standards. However, once the attenuation factors were applied, the predicted indoor and outdoor air calculated concentrations were less than the CSR IL/CL standards.

Based on the modeled results for the parameters available and the lack of results for additional parameters listed in the CSAP Society fuels list, vapours were conservatively considered contaminated. It was anticipated that vapours would be remediated by the removal of the soils on-Site, so a post-remediation confirmatory sample was collected at SV15-18 and results are included in section 4.2.2.2.

4.4.2.2 Vapour Results - Sampling

One soil vapour sample was collected at SV15-18. The following non-attenuated results were above the CSR IL/CL standards:

- VPHv = 240,000 $\mu\text{g}/\text{m}^3$ (CL = 3,000 $\mu\text{g}/\text{m}^3$; IL = 11,500 $\mu\text{g}/\text{m}^3$)
- benzene = 55 $\mu\text{g}/\text{m}^3$ (CL = 4 $\mu\text{g}/\text{m}^3$; IL = 10 $\mu\text{g}/\text{m}^3$)
- n-hexane = 16,000 $\mu\text{g}/\text{m}^3$ (CL = 2,000 $\mu\text{g}/\text{m}^3$; IL = 6,500 $\mu\text{g}/\text{m}^3$)
- methylcyclohexane = 26,000 $\mu\text{g}/\text{m}^3$ (CL = 9,000 $\mu\text{g}/\text{m}^3$; IL = 27,000 $\mu\text{g}/\text{m}^3$)

Once the attenuation factors were applied, the predicted indoor and outdoor air calculated concentrations were less than the CSR IL/CL standards. Analytical results for soil vapour are included in Table 12 and presented on Figure 6. Laboratory certificates are included in Appendix F.

4.5 Quality Assurance and Quality Control

4.5.1 Field QA/QC

Keystone Environmental employed field measures to confirm quality assurance and quality control (QA/QC) when performing both sample collection for laboratory analyses and general fieldwork.

To minimize the potential for cross-contamination of samples, the following procedures were used by Keystone Environmental:

- New gloves were used for each sample collected
- Tools were cleaned with Alconox™ soap and distilled water between samples
- Samples were placed in laboratory-supplied containers suitable for the analysis
- Samples were labelled and stored in a chilled cooler while in the field and during transport to the laboratory
- Samples and field duplicates were collected during each of the soil and groundwater sampling events for quality control purposes. The samples were labelled and stored in a chilled coolers with the original samples while in the field and during transport to the laboratory.

Samples were collected and submitted for analysis under chain of custody documentation to Maxxam, a Canadian Association for Laboratory Accreditation (CALA) certified laboratory. Soil, groundwater and vapour analysis was conducted in accordance with MOE procedures, and the MOE-recommended laboratory QA/QC protocols were followed.

The measure of the reproducibility or precision of the data is quantified by a parameter referred to as the Relative Percent Difference (RPD). The RPD is calculated by taking the absolute value of the difference between the sample and the duplicate and dividing it by the average of the

sample and duplicate, multiplied by 100, to obtain a percentage. Generally, RPD values greater than 35% in soil/soil vapour and 20% in water suggest further review. However, if the concentration of the analyte is less than five times the method detection limit, or if the analyte is a metal in soil, then an RPD greater than 35% may be reasonable. If the RPD is greater than 50%, then it is generally necessary to determine a cause and decide whether the effect of the elevated RPD value may alter the findings of the investigation (i.e., change the classification of a sample from “uncontaminated” to “contaminated” based on the applicable criteria).

Soil

The following duplicate pairs were collected:

Table 4-4 Soil QA/QC

Soil Sample and Field Duplicate	Analysis
CS15-11(1.5) and CS15-A	VPH and BTEX
CS15-18 (1.3) and CS15-B	Zinc
CS15-20 (0.6) and CS15-C	Copper, lead and zinc

BTEX – Benzene, Toluene, Ethylbenzene, Xylenes VPH – Volatile Petroleum Hydrocarbons

As RPD values were less than 35% and/or could not be calculated due to concentration being less than the RDL or less than five times the RDL, suggesting that the sample and duplicate results are in general agreement and are considered to be reliable and reproducible. Field QA/QC results for this phase are included in Tables 7 and 8.

Groundwater

One post-remedial QA/QC pair was collected (MW15-18 and MW15-AA) and submitted for analyses of LEPH, naphthalene, VPH and BTEX. The RPD values were less than 20% and/or could not be calculated due to concentration being less than the RDL or less than five times the RDL, suggesting that the sample and duplicate results are in general agreement and are considered to be reliable and reproducible. Field QA/QC results for this phase are included in Table 11.

4.5.2 Laboratory QA/QC Results

The laboratory QA/QC measures included method blanks, duplicate analyses, and spike and matrix spike recoveries were reviewed in addition to the Maxxam quality assurance and quality control calculations. The laboratory RPD values were within acceptable limits, or were less than five times the detection limits. The sample blank and spike analyses were also within the acceptable limits. Sample hold times of 7 to 180 days for soil and groundwater, depending on the parameter being analysed were not exceeded. Therefore, the samples and duplicates are in agreement, sample integrity has been maintained and the data is considered reliable. The laboratory completed QA/QC is provided in the Laboratory Analytical Reports included in Appendix F.

4.6 Summary

Keystone Environmental conducted a Phase I and II ESA on the properties listed as 370 and 456 Prior Street in May and August of 2014, respectively. The Phase I ESA identified five APECs and a Phase II ESA included the drilling of seven boreholes completed as groundwater monitoring wells and the sampling of seven groundwater monitoring wells to investigate the APECS. Hydrocarbon contamination, in both soil and groundwater, was identified on the south side of the suspect UST.

In February 2015, Keystone Environmental supervised the removal of an approximately 13,000 L UST, containing approximately 520 L of a mix of gasoline and water. Following the UST removal and soil remediation, additional drilling was conducted to investigate the groundwater and delineate the residual soil contamination. Nine boreholes, eight of which were installed as monitoring wells, were advanced to the north, northeast, southeast, south, southwest and northwest of the excavation extent during two separate drilling events. Soil analytical results exceeding the CSR IL/CL and AW_M standards were identified at MW15-9 and MW15-17 and groundwater concentrations exceeding the CSR AW_M standards were identified at MW15-8 and MW15-9.

The previous results were compared to the CSR IL/CL and AW_M standards and the table below summarizes the exceedances that were retained as Areas of Environmental Concern (AECs) for this confirmation of remediation:

Table 4-5 Analytical results above the CSR IL/CL and AW_M standards

APEC/AEC	Location (depth in mbg for the soil sample)	Soil (mg/kg)	Groundwater (ug/L)
1. Fill	MW14-5 (0.6)	Copper = 285 (IL/CL = 90-250) Zinc = 409 (IL/CL = 150-600)	-
	MW14-6 (0.8)	Zinc = 435 (IL/CL = 150-600)	-
	BH15-19 (0.6)	Copper = 2,160 (IL/CL = 90-250) Zinc = 1,210 (IL/CL = 150-600)	-
2. UST	MW14-4 (1.5)	VH = 210 (CL/IL = 200)	LEPH _w = 3,300 > 500 AW _M naphthalene = 110 > 10 AW _M VPH = 3,300 > 200 AW _M
	MW15-8	-	LEPH _w = 1,800 > 500 AW _M
	MW15-9 (1.8)	Ethylbenzene = 97 (CL/IL = 20) Xylenes = 330 (CL/IL = 50) VH = 2,200 (CL/IL = 200) VPH = 1,800 (CL/IL = 200)	LEPH _w = 4,000 > 500 AW _M naphthalene = 190 > 10 AW _M VPH = 3,400 > 200 AW _M
	MW15-17 (1.5)	VH = 870 (CL/IL = 200) VPH = 860 (CL/IL = 200)	-

Italic concentration exceeds IL standards
BTEX – Benzene, Toluene, Ethylbenzene, Xylenes
LEPH – Light Extractable Petroleum Hydrocarbons
HEPH – Heavy Extractable Petroleum Hydrocarbons
* standards are pH dependent

Bold concentration exceeds CL standards
VPH – Volatile Petroleum Hydrocarbons
PAH – Polycyclic Aromatic Hydrocarbon
No exceedances or sample not analyzed
AEC – Area of Environmental Concern

Therefore, APECs 1 and 2 were retained as area of environmental concern (AEC) requiring remedial excavation. The confirmation of remediation program is summarized by media below.

4.6.1 Soil

Soil remediation was conducted at the Site from June 1 to 4, 2015, by Sumas (Photo 1 in Appendix C). Additional remediation was conducted by Badger using a vacuum truck on June 25, 2015 (Photos 3 and 4 in Appendix C). Keystone Environmental was on-Site to identify the areas and observe the remediation, to manifest the trucks and to collect confirmatory soil samples. Approximately 676.6 tonnes of soil was excavated, and transported for off-Site disposal at the Sumas facility in Burnaby, BC. Soil analytical results from the final remedial extent were less than the applicable standards and therefore it is considered that the Site was successfully remediated to meet the CSR IL/CL standards.

4.6.2 Groundwater

Prior to the remedial activities, BTEX, LEPH, naphthalene and VPH were identified as groundwater constituents of concern within and down-gradient of the former tank nest area. Following the remedial excavation, three monitoring wells were installed within the excavation limits. Groundwater samples were collected in two separate sampling events from two monitoring wells that represented the worst-case scenario for the Site (where the concentration of hydrocarbons was the highest prior to the remedial activities). Groundwater was remediated by the removal of the hydrocarbon source in the soils. Analytical results for the post-remediation groundwater samples collected for LEPH, VPH, BTEX, naphthalene and dissolved lead were less the CSR AW_M standards. Therefore, groundwater within the vicinity of the tank nest area the area identified by the notification of off-Site migration was successfully remediated to meet the CSR AW_M standards.

DW water applicability was also investigated by two slug tests conducted at the post-remedial groundwater monitoring well MW15-19 and hydraulic conductivity values ranged from 1.21×10^{-7} m/s to 1.86×10^{-7} m/s. These results show that the till unit at the Site would likely not provide a typical well yield suitable to meet the requirements for a drinking water source as outlined in MOE TG6.

4.6.3 Vapour

Soil vapour was not investigated prior to the remedial activities. Therefore, concentrations of the certain parameters listed on the CSAP Society list for gasoline sites were modelled from soil and groundwater results from the investigation phase to conservatively predict vapour concentrations in the indoor and outdoor breathing zones. Attenuated modelled concentrations of several volatile and semi-volatile hydrocarbons exceeded the CSR IL/CL standards. Soil vapour remediation occurred in conjunction with the removal of the soils. Therefore, following the remedial excavation, a soil vapour sample was collected to represent the worst case scenario (where the highest concentration of volatiles and semi-volatiles were detected on-Site) and attenuated results from SV15-18 were less than the CSR IL/CL standards. Therefore, vapour concentrations within the tank nest area were successfully remediated to meet the CSR IL/CL standards.

4.7 Remediation Conclusion

Based on the confirmatory soil, groundwater and vapour results, it is concluded that the soil contamination identified at MW14-6, MW14-5 and BH15-19 associated with AEC 1 and the soil, groundwater and vapour contamination associated with AEC 2 at the Site have been remediated to less than the CSR IL/CL and AW_M standards.

Since the southern portion of the Site is contiguous with the historical area wide False Creek fill confirmed in the area, further investigation or remediation maybe required for future characterization of soil disposal in the event of a redevelopment of the Site or prior to the submission for a Ministry Instrument.

5. CONCLUSIONS

It is concluded that constituents of concern associated with the on-site fill material (AEC 1) at MW14-5, MW14-6 and BH15-19 and the constituents of concern associated with the former on-Site UST (AEC 2) have been remediated in the Site soil, groundwater and/or soil vapour to concentrations less the BC CSR IL and CL standards for soil and soil vapour, and the CSR AW_M standards for groundwater.

We trust this is the information you require at this time. Please contact us should you have any questions.

Sincerely,

Keystone Environmental Ltd.

Francini Osses Martins, M.Sc., R.P.Bio
Project Coordinator

Keree Orso, M.Sc., R.P.Bio.
Senior Project Manager

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ATTACHMENTS:

- Figures
- Tables
- Appendix A – Previous Documents and NIR
- Appendix B – DW Applicability Supporting Documents
- Appendix C – Photographic Documentation
- Appendix D – Soil Disposal Summary
- Appendix E – Well Development and Purge and Sample Forms
- Appendix F – Maxxam Analytics Ltd. Certificates of Analysis
- Appendix G – Keystone Environmental Ltd. General Terms and Conditions for Services

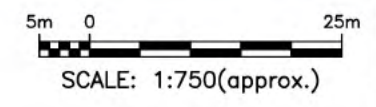
FIGURES



LEGEND

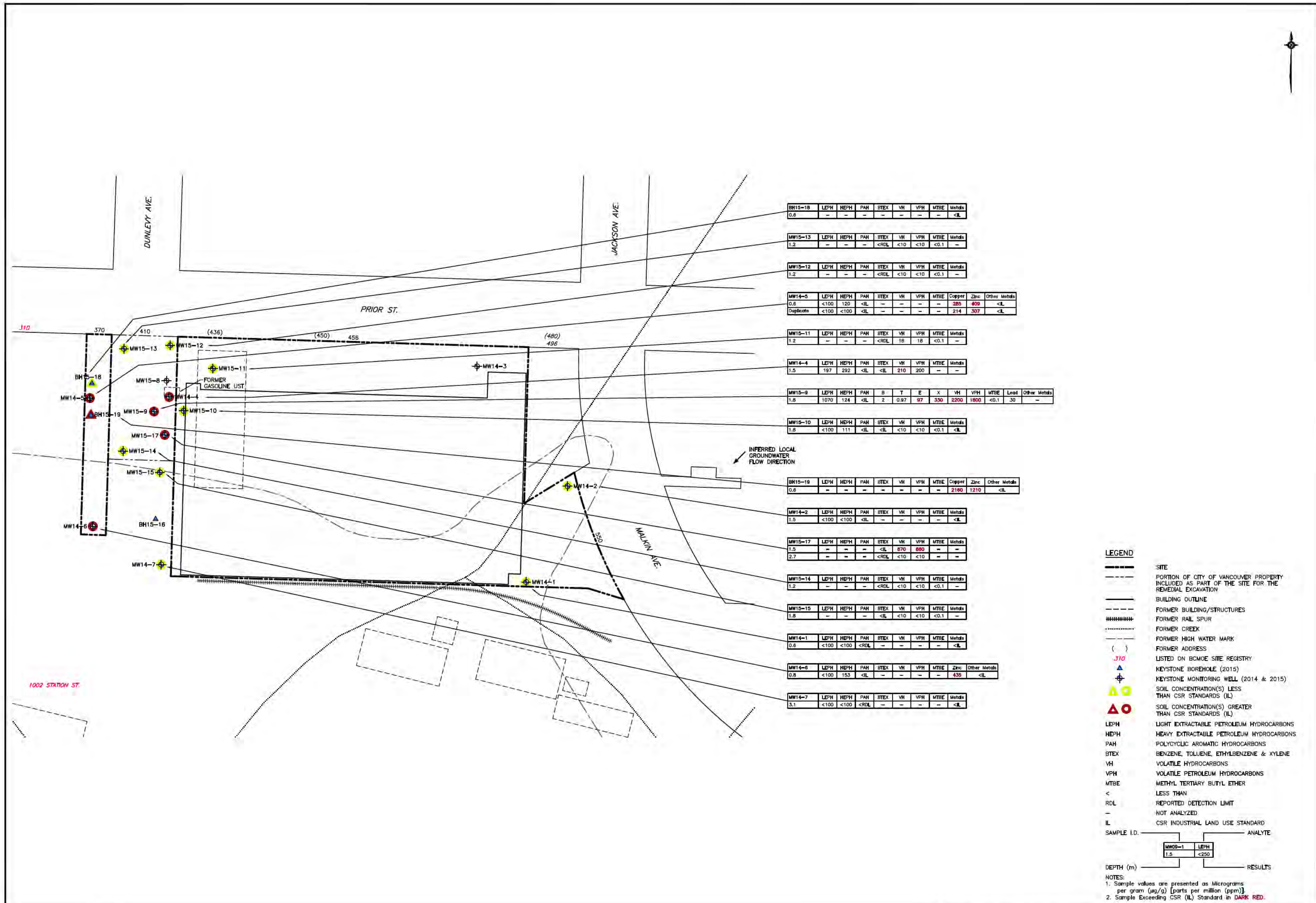
———	SITE
- - - - -	PORTION OF CITY OF VANCOUVER PROPERTY INCLUDED AS PART OF THE SITE FOR THE REMEDIAL EXCAVATION
———	BUILDING OUTLINE
- - - - -	FORMER BUILDING/STRUCTURES
	FORMER RAIL SPUR
.....	FORMER CREEK
- - - - -	FORMER HIGH WATER MARK
()	FORMER ADDRESS
310	LISTED ON BCMOE SITE REGISTRY
▲	KEYSTONE BOREHOLE (2015)
⊕	KEYSTONE MONITORING WELL (2014 & 2015)
⊙	KEYSTONE SOIL VAPOUR WELL (2014 & 2015)

NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY. LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
 2. AIR PHOTO DATE IS 2011.



370 & 456 Prior Street Vancouver, B C 456 Prior Street Holdings Ltd.		
REVISION No. 00	DATE July 2015	PROJECT No. 12349-14

**Figure 1
Sample Location Plan**



LEGEND

- SITE**
 - PORTION OF CITY OF VANCOUVER PROPERTY INCLUDED AS PART OF THE SITE FOR THE REMEDIAL EXCAVATION
 - BUILDING OUTLINE
 - FORMER BUILDING/STRUCTURES
 - FORMER RAIL SPUR
 - FORMER CREEK
 - FORMER HIGH WATER MARK
 - () FORMER ADDRESS
 - 370 LISTED ON BCMOE SITE REGISTRY
 - ▲ KEYSTONE BOREHOLE (2015)
 - ⊕ KEYSTONE MONITORING WELL (2014 & 2015)
 - SOIL CONCENTRATION(S) LESS THAN CSR STANDARDS (IL)
 - ⊗ SOIL CONCENTRATION(S) GREATER THAN CSR STANDARDS (IL)
 - ▲ LEPH LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS
 - HEPH HEAVY EXTRACTABLE PETROLEUM HYDROCARBONS
 - PAH POLYCYCLIC AROMATIC HYDROCARBONS
 - ◆ BTEX BENZENE, TOLUENE, ETHYLBENZENE & XYLENE
 - ◇ VH VOLATILE HYDROCARBONS
 - ▽ VPH VOLATILE PETROLEUM HYDROCARBONS
 - MTBE METHYL TERTIARY BUTYL ETHER
 - < LESS THAN
 - RDL REPORTED DETECTION LIMIT
 - NOT ANALYZED
 - IL CSR INDUSTRIAL LAND USE STANDARD
- SAMPLE I.D.**

MW05-1	LEPH
1.5	<250
- DEPTH (m)**

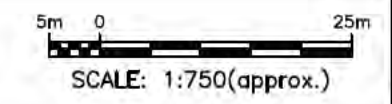
RESULTS

NOTES:
 1. Sample values are presented as Micrograms per gram (µg/g) [parts per million (ppm)].
 2. Sample Exceeding CSR (IL) Standard in **DARK RED**.



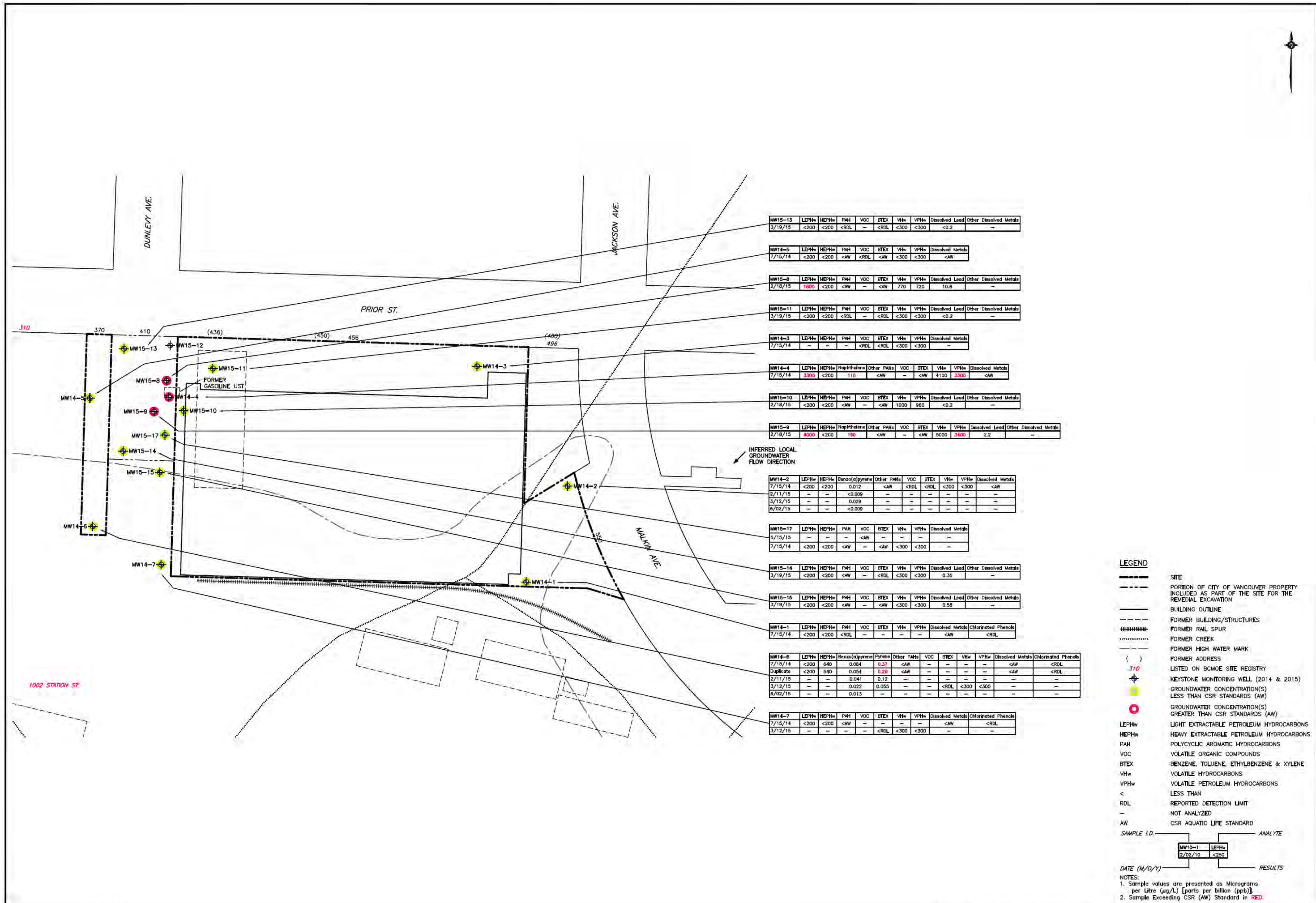
NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
 LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.

PLOT SCALE: 1:1 DRAWN BY: DK/AB CADD FILE No. 12349\Figs\July 2015\Fig2-Soil Analytical-R0.dwg



370 & 456 Prior Street
 Vancouver, B C
 456 Prior Street Holdings Ltd.
 REVISION No. 00 DATE July 2015 PROJECT No. 12349-14

Figure 2
 Soil Analytical Results



MW15-13	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Lead	Other Dissolved Metals
3/19/15	<200	<200	<RDL	—	<RDL	<300	<300	<0.2	—

MW14-5	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Metals
7/15/14	<200	<200	<AW	<RDL	<AW	<300	<300	<AW

MW15-8	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Lead	Other Dissolved Metals
2/18/15	1600	<200	<AW	—	<AW	770	720	10.8	—

MW15-11	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Lead	Other Dissolved Metals
3/19/15	<200	<200	<RDL	—	<RDL	<300	<300	<0.2	—

MW14-3	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Metals
7/15/14	—	—	—	<RDL	<RDL	<300	<300	—

MW14-4	LEPHw	HEFHw	Naphthalene	Other PAHs	VOC	BTEX	Vhw	VPHw	Dissolved Metals
7/15/14	3300	<200	110	<AW	—	<AW	4100	3300	<AW

MW15-10	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Lead	Other Dissolved Metals
2/18/15	<200	<200	<AW	—	<AW	1000	950	<0.2	—

MW15-9	LEPHw	HEFHw	Naphthalene	Other PAHs	VOC	BTEX	Vhw	VPHw	Dissolved Lead	Other Dissolved Metals
2/18/15	4000	<200	190	<AW	—	<AW	5000	3400	2.2	—

MW14-2	LEPHw	HEFHw	Benzo(a)pyrene	Other PAHs	VOC	BTEX	Vhw	VPHw	Dissolved Metals
7/15/14	<200	<200	0.012	<AW	<RDL	<RDL	<300	<300	<AW

2/11/15	—	—	<0.009	—	—	—	—	—	—
3/12/15	—	—	0.029	—	—	—	—	—	—
6/02/15	—	—	<0.009	—	—	—	—	—	—

MW15-17	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Metals
5/15/15	—	—	<AW	—	—	—	—	—

MW15-14	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Lead	Other Dissolved Metals
3/19/15	<200	<200	<AW	—	<RDL	<300	<300	0.35	—

MW15-15	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Lead	Other Dissolved Metals
3/19/15	<200	<200	<AW	—	<AW	<300	<300	0.58	—

MW14-1	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Metals	Chlorinated Phenols
7/15/14	<200	<200	<RDL	—	—	—	—	<AW	<RDL

MW14-6	LEPHw	HEFHw	Benzo(a)pyrene	Pyrene	Other PAHs	VOC	BTEX	Vhw	VPHw	Dissolved Metals	Chlorinated Phenols
7/15/14	<200	540	0.054	0.37	<AW	—	—	—	—	<AW	<RDL

2/11/15	—	—	0.041	0.12	—	—	—	—	—	—	—
3/12/15	—	—	0.022	0.055	—	—	<RDL	<300	<300	—	—
6/02/15	—	—	0.013	—	—	—	—	—	—	—	—

MW14-7	LEPHw	HEFHw	PAH	VOC	BTEX	Vhw	VPHw	Dissolved Metals	Chlorinated Phenols
7/15/14	<200	<200	<AW	—	—	—	—	<AW	<RDL

2/11/15	—	—	—	—	—	—	—	—	—
3/12/15	—	—	—	—	—	—	—	—	—
6/02/15	—	—	—	—	—	—	—	—	—

LEGEND

- SITE
- PORTION OF CITY OF VANCOUVER PROPERTY INCLUDED AS PART OF THE SITE FOR THE REMEDIAL EXCAVATION
- BUILDING OUTLINE
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- GROUNDWATER CONCENTRATION(S) LESS THAN CSR STANDARDS (AW)
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- LEPHw LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS
- HEFHw HEAVY EXTRACTABLE PETROLEUM HYDROCARBONS
- PAH POLYCYCLIC AROMATIC HYDROCARBONS
- VOC VOLATILE ORGANIC COMPOUNDS
- BTEX BENZENE, TOLUENE, ETHYLBENZENE & XYLENE
- Vhw VOLATILE HYDROCARBONS
- VPHw VOLATILE PETROLEUM HYDROCARBONS
- < LESS THAN
- <RDL REPORTED DETECTION LIMIT
- NOT ANALYZED
- AW CSR AQUATIC LIFE STANDARD

SAMPLE I.D. ANALYTE

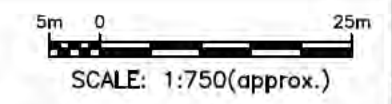
MW14-1	LEPHw	2/02/10	<250
--------	-------	---------	------

DATE (M/D/Y) RESULTS

NOTES:
 1. Sample values are presented as Micrograms per Litre (µg/L) [parts per billion (ppb)].
 2. Sample Exceeding CSR (AW) Standard in RED.

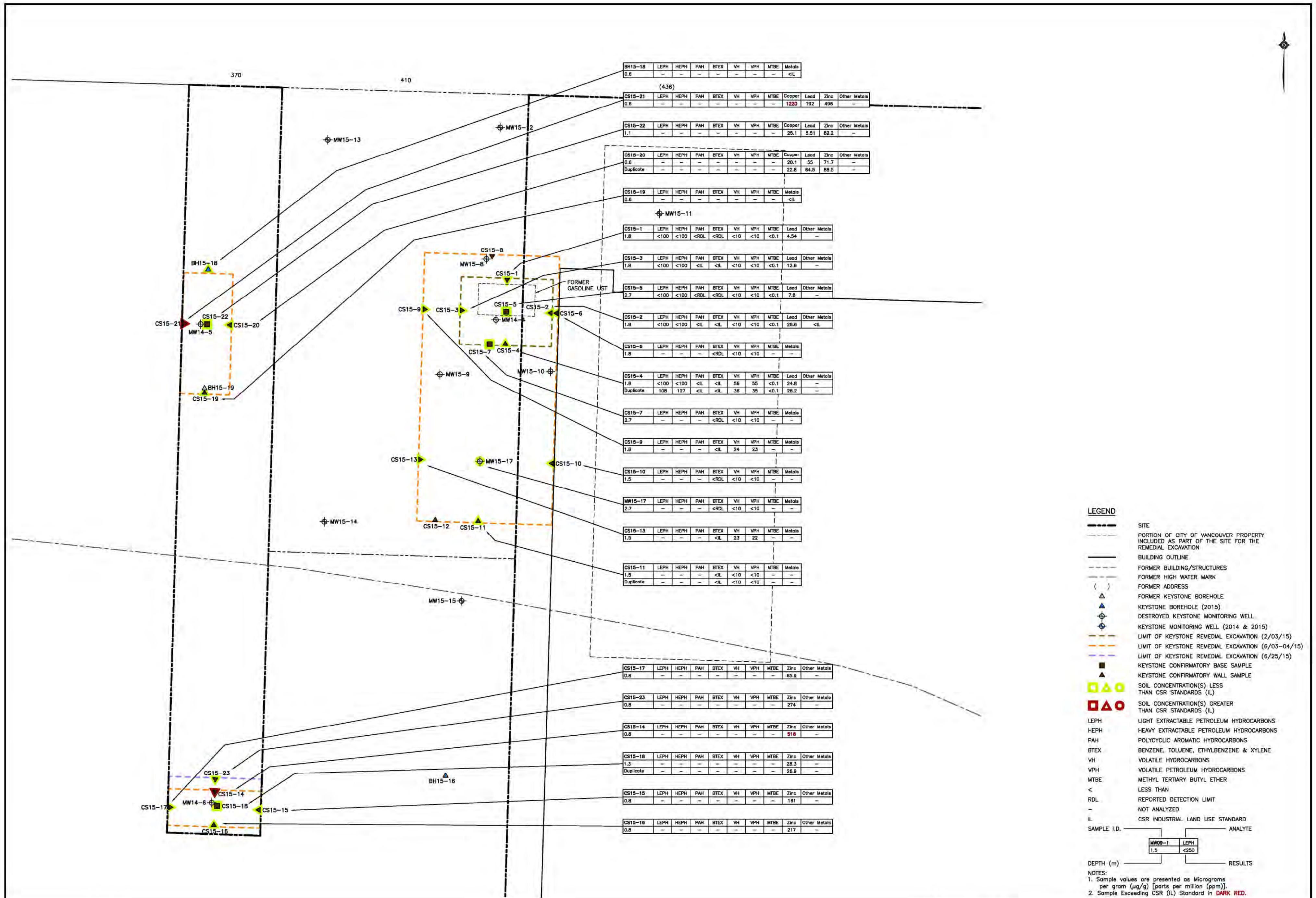


NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY. LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.



370 & 456 Prior Street
 Vancouver, B C
 456 Prior Street Holdings Ltd.
 REVISION No. 00 DATE July 2015 PROJECT No. 12349-14

Figure 3
 Groundwater Analytical Results



LEGEND

- SITE
- PORTION OF CITY OF VANCOUVER PROPERTY INCLUDED AS PART OF THE SITE FOR THE REMEDIAL EXCAVATION
- BUILDING OUTLINE
- FORMER BUILDING/STRUCTURES
- FORMER HIGH WATER MARK
- () FORMER ADDRESS
- ▲ FORMER KEYSTONE BOREHOLE
- ▲ KEYSTONE BOREHOLE (2015)
- ⊕ DESTROYED KEYSTONE MONITORING WELL
- ⊕ KEYSTONE MONITORING WELL (2014 & 2015)
- LIMIT OF KEYSTONE REMEDIAL EXCAVATION (2/03/15)
- LIMIT OF KEYSTONE REMEDIAL EXCAVATION (6/03-04/15)
- LIMIT OF KEYSTONE REMEDIAL EXCAVATION (6/25/15)
- KEYSTONE CONFIRMATORY BASE SAMPLE
- ▲ KEYSTONE CONFIRMATORY WALL SAMPLE
- ▲ SOIL CONCENTRATION(S) LESS THAN CSR STANDARDS (IL)
- ▲ SOIL CONCENTRATION(S) GREATER THAN CSR STANDARDS (IL)
- LEPH LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS
- HEPH HEAVY EXTRACTABLE PETROLEUM HYDROCARBONS
- PAH POLYCYCLIC AROMATIC HYDROCARBONS
- BTEX BENZENE, TOLUENE, ETHYLBENZENE & XYLENE
- VH VOLATILE HYDROCARBONS
- VPH VOLATILE PETROLEUM HYDROCARBONS
- MTBE METHYL TERTIARY BUTYL ETHER
- < LESS THAN
- RDL REPORTED DETECTION LIMIT
- NOT ANALYZED
- IL CSR INDUSTRIAL LAND USE STANDARD

SAMPLE I.D. --- ANALYTE

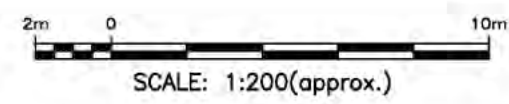
DEPTH (m) --- RESULTS

NOTES:

- Sample values are presented as Micrograms per gram (µg/g) [parts per million (ppm)].
- Sample Exceeding CSR (IL) Standard in **DARK RED**.

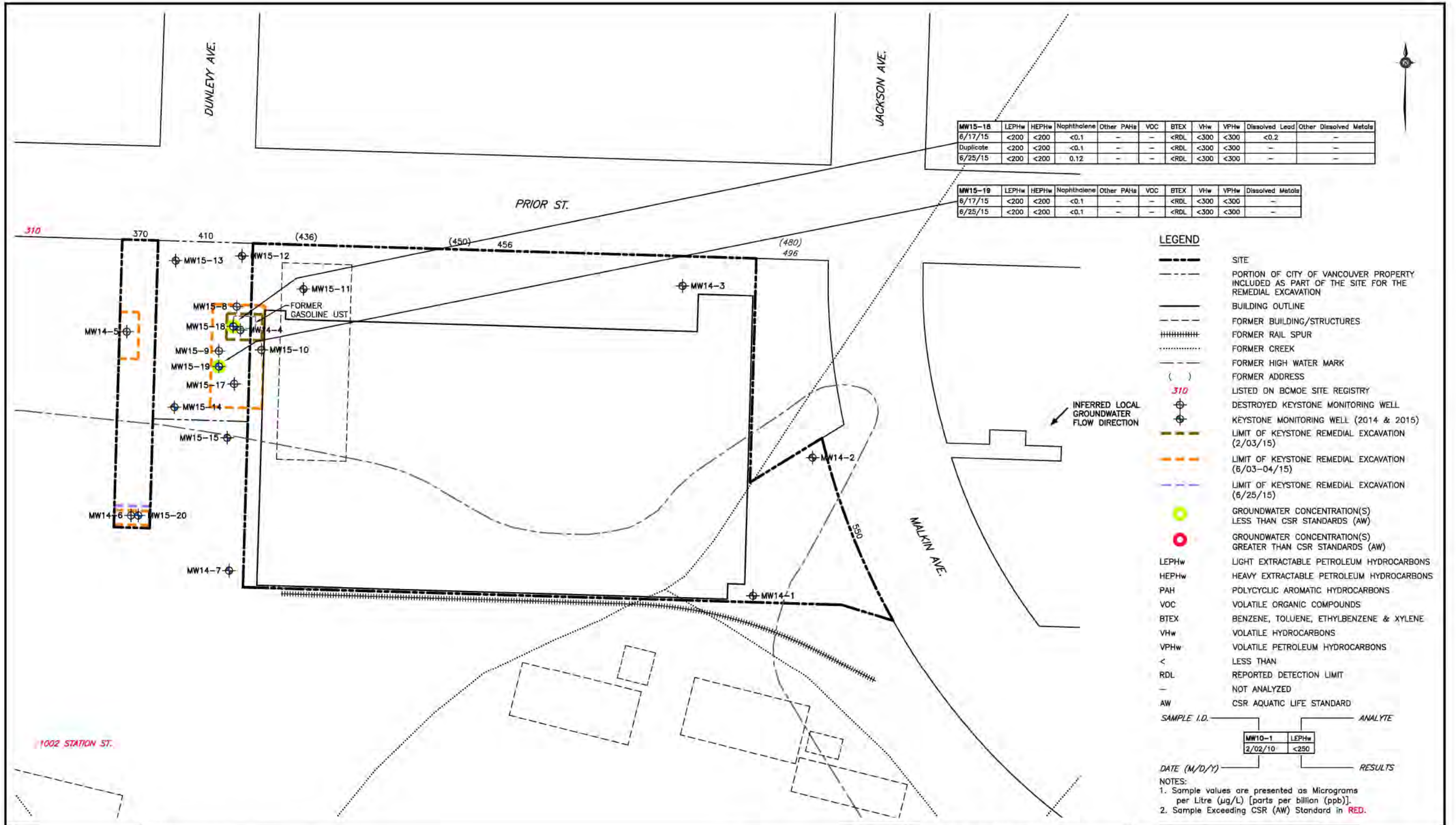


NOTES:
1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.

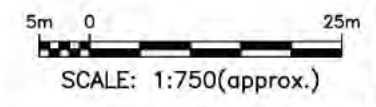


370 & 456 Prior Street
Vancouver, B C
456 Prior Street Holdings Ltd.
REVISION No. 00 DATE July 2015 PROJECT No. 12349-14

Figure 4
Confirmatory Soil Analytical Results

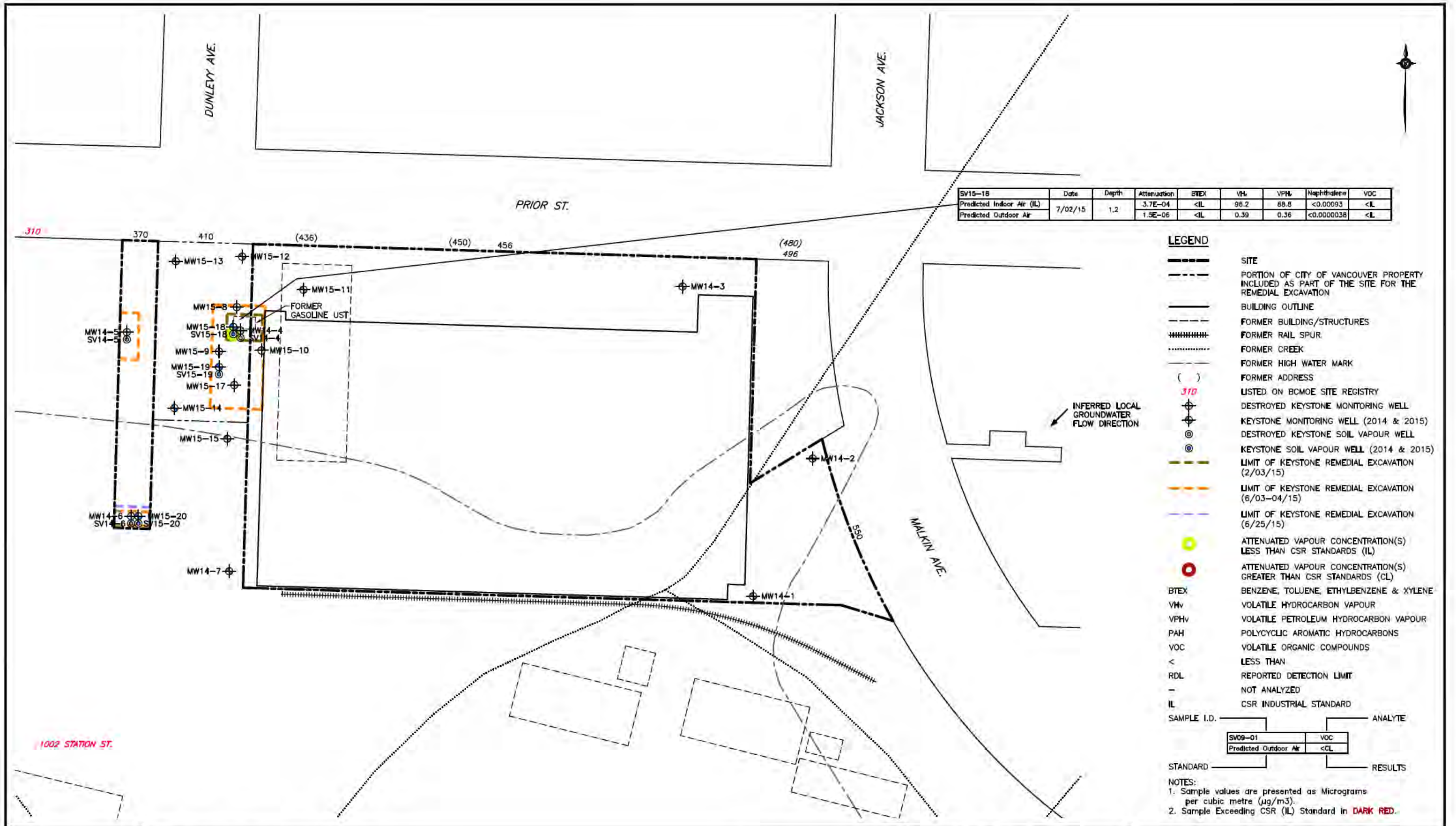


NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
 LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.

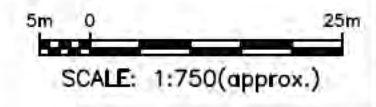


370 & 456 Prior Street
 Vancouver, B C
 456 Prior Street Holdings Ltd.
 REVISION No. 00 DATE July 2015 PROJECT No. 12349-14

Figure 5
 Post Remediation
 Groundwater Analytical Results



NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
 LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.



370 & 456 Prior Street
 Vancouver, B C
 456 Prior Street Holdings Ltd.
 REVISION No. 00 DATE July 2015 PROJECT No. 12349-14

Figure 6
 Vapour Analytical Results

TABLES

TABLE 1: SOIL ANALYTICAL RESULTS

HYDROCARBONS
 456 Prior Street, Vancouver, BC
 456 Prior Street Holdings Ltd.
 Project #: 12349
 July 2015

CSR CL Standards	CSR IL Standards
------------------	------------------

n/s	n/s
200	200
200e	200e
2000	2000
2000e	2000e
5000	5000
5000e	5000e

2.5a	2.5a
20a	20a
50	50
25a	25a
50	50

n/s	n/s
n/s	n/s
n/s	n/s
10	10
10a	10a
10	10
10	10
n/s	n/s
10	10
n/s	n/s
10	10
n/s	n/s
10	10
n/s	n/s
n/s	n/s
10	10
n/s	n/s
n/s	n/s
10	10
n/s	n/s
50	50
n/s	n/s
50	50
100	100
n/s	n/s
n/s	n/s
n/s	n/s

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	MW14-1(0.6)	MW14-2(1.5)	MW14-4 (1.5)	MW14-5 (0.6)	MW14-C	RPD or MS for MW14-5 (0.6) and MW14-C	MW14-6 (0.8)	MW14-7 (3.1)	
Petroleum Hydrocarbons										
Waste Oil	µg/g	200	200	489	220	200	10%	253	200	
VPHs	µg/g	--	--	200	--	--	--	--	--	
VHs ₁₀	µg/g	--	--	210	--	--	--	--	--	
LEPHs	µg/g	<100	<100	187	<100	<100	--	<100	<100	
EPHs ₁₀₋₁₅	µg/g	<100	<100	199	<100	<100	--	<100	<100	
HEPHs	µg/g	<100	<100	292	120	<100	20<100	153	<100	
EPHs ₁₀₋₃₂	µg/g	<100	<100	292	121	<100	21<100	154	<100	
Monocyclic Aromatic Hydrocarbons										
benzene	µg/g	--	--	0.95	--	--	--	--	--	
ethylbenzene	µg/g	--	--	2.5	--	--	--	--	--	
styrene	µg/g	--	--	≤0.030	--	--	--	--	--	
toluene	µg/g	--	--	0.095	--	--	--	--	--	
xylene	µg/g	--	--	3.6	--	--	--	--	--	
Polycyclic Aromatic Hydrocarbons										
acenaphthene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	0.82	<0.050	
acenaphthylene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050	
anthracene	µg/g	<0.050	<0.050	0.051	0.053	<0.050	0.003<0.05	0.11	<0.050	
benzo[a]anthracene	µg/g	<0.050	0.11	0.088	0.16	0.099	0.061>0.05	0.1	<0.050	
benzo[a]pyrene	µg/g	<0.050	0.11	0.088	0.17	0.099	0.071>0.05	0.087	<0.050	
benzo[b]fluoranthene	µg/g	<0.050	0.093	0.081	0.15	0.096	0.054>0.05	0.081	<0.050	
benzo[b+j]fluoranthene	µg/g	<0.050	0.16	0.14	0.25	0.16	0.09>0.05	0.14	<0.050	
benzo[g,h,i]perylene	µg/g	<0.050	0.068	0.065	0.12	0.1	0.02<0.05	0.089	<0.050	
benzo[k]fluoranthene	µg/g	<0.050	0.054	<0.050	0.078	0.053	0.025<0.05	<0.050	<0.050	
chrysene	µg/g	<0.050	0.13	0.11	0.2	0.14	0.05>0.05	0.14	<0.050	
dbenz[a,h]anthracene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050	
fluoranthene	µg/g	<0.050	0.25	0.26	0.36	0.21	0.15>0.05	0.24	<0.050	
fluorene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	0.74	<0.050	
indeno[1,2,3-cd]pyrene	µg/g	<0.050	0.056	0.053	0.098	0.068	0.03<0.05	<0.050	<0.050	
methylnaphthalene, 2-	µg/g	<0.050	0.18	2.3	0.37	0.26	35%	2	<0.050	
naphthalene	µg/g	<0.050	0.14	1.3	0.64	0.66	3%	1.3	<0.050	
PAH TEQ	µg/g	0.065	0.1744	0.1463	0.2659	0.1649	43%	0.1401	0.066	
phenanthrene	µg/g	<0.050	0.13	0.19	0.18	0.082	0.098>0.05	0.54	<0.050	
pyrene	µg/g	<0.050	0.25	0.25	0.36	0.22	0.14>0.05	0.23	<0.050	
Total HMW-PAHs	µg/g	<0.050	1.2	1.1	1.8	1.2	40%	1	<0.050	
Total LMW-PAHs	µg/g	<0.050	0.44	3.9	1.3	1	26%	5.4	<0.050	
Total PAHs	µg/g	<0.050	1.6	4.9	3	2.2	31%	6.4	<0.050	

Soil Excavations

126
125

Exceeds CSR CL standards
 Exceeds CSR IL standards

QA/QC Excavations

63%
5-1

RPD exceeds 35%
 MS exceeds RDL



L ANALYTICAL RESULTS

DNS

at Vancouver, BC

at Holdings Ltd.

19

CSR IL Standards	SAMPLE ID	Units	MW15-9 (1.8)	MW15-10 (1.8)	MW15-11 (1.2)	MW15-12 (1.2)	MW15-13 (1.2)	MW15-14 (1.2)	MW15-15 (1.8)	MW15-17 (1.5)	MW15-17 (2.7)
	DATE SAMPLED		10-Feb-15	10-Feb-15	17-Mar-15	17-Mar-15	17-Mar-15	17-Mar-15	17-Mar-15	14-May-15	14-May-15
	LAB CERTIFICATE		B611112	B611112	B621759	B621759	B621759	B621759	B621759	B640162	B640162
	LAB SAMPLE ID		LR2135	LR2138	LW9624	LW9628	LW9632	LW9637	LW9642	MG1863	MG1865
	SAMPLE DEPTH (m bg)		1.8	1.8	1.2	1.2	1.2	1.2	1.8	1.5	2.7
	SOIL DESCRIPTION										
Petroleum Hydrocarbons											
n/s	Waste Oil	µg/g	1194	211	-	-	-	-	-	-	-
200	VPHs	µg/g	1800	<10	-	18	<10	<10	<10	<10	860
200e	VHs ₅₋₁₀	µg/g	2200	<10	-	18	<10	<10	<10	<10	870
2000	LEPHs	µg/g	1070	<100	-	-	-	-	-	-	-
2000e	EPH ₅₁₀₋₁₅	µg/g	1080	<100	-	-	-	-	-	-	-
5000	HEPHs	µg/g	124	111	-	-	-	-	-	-	-
5000e	EPH ₅₁₀₋₃₂	µg/g	124	112	-	-	-	-	-	-	-
Monocyclic Aromatic Hydrocarbons											
2.5a	benzene	µg/g	2	0.31	<0.0050	<0.0050	<0.0050	<0.0050	0.054	0.41	<0.0050
20a	ethylbenzene	µg/g	97	0.028	<0.010	<0.010	<0.010	<0.010	0.075	5.9	<0.010
50	styrene	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
25a	toluene	µg/g	0.97	0.075	<0.020	<0.020	<0.020	<0.020	<0.020	0.98	<0.020
50	xylenes	µg/g	330	0.81	<0.040	<0.040	<0.040	<0.040	0.26	2.9	<0.040
Polycyclic Aromatic Hydrocarbons											
n/s	acenaphthene	µg/g	0.073	<0.050	-	-	-	-	-	-	-
n/s	acenaphthylene	µg/g	<0.050	<0.050	-	-	-	-	-	-	-
n/s	anthracene	µg/g	0.071	<0.050	-	-	-	-	-	-	-
10	benzo[a]anthracene	µg/g	0.089	0.072	-	-	-	-	-	-	-
10a	benzo[a]pyrene	µg/g	0.082	0.083	-	-	-	-	-	-	-
10	benzo[b]fluoranthene	µg/g	0.067	0.057	-	-	-	-	-	-	-
10	benzo[b+j]fluoranthene	µg/g	0.12	0.099	-	-	-	-	-	-	-
n/s	benzo[g,h,i]perylene	µg/g	0.059	<0.050	-	-	-	-	-	-	-
10	benzo[k]fluoranthene	µg/g	<0.050	<0.050	-	-	-	-	-	-	-
n/s	chrysene	µg/g	0.089	0.084	-	-	-	-	-	-	-
10	dibenz[a,h]anthracene	µg/g	<0.050	<0.050	-	-	-	-	-	-	-
n/s	fluoranthene	µg/g	0.32	0.21	-	-	-	-	-	-	-
n/s	fluorene	µg/g	0.097	<0.050	-	-	-	-	-	-	-
10	indeno[1,2,3-cd]pyrene	µg/g	<0.050	<0.050	-	-	-	-	-	-	-
n/s	methylnaphthalene, 2-	µg/g	21	0.15	-	-	-	-	-	-	-
50	naphthalene	µg/g	20	0.17	-	-	-	-	-	-	-
n/s	PAH TEQ	µg/g	0.1326	0.1109	-	-	-	-	-	-	-
50	phenanthrene	µg/g	0.24	0.13	-	-	-	-	-	-	-
100	pyrene	µg/g	0.29	0.2	-	-	-	-	-	-	-
n/s	Total HMW-PAHs	µg/g	1.1	0.73	-	-	-	-	-	-	-
n/s	Total LMW-PAHs	µg/g	42	0.45	-	-	-	-	-	-	-
n/s	Total PAHs	µg/g	43	1.2	-	-	-	-	-	-	-

Exceeds CSR CL standards

Exceeds CSR IL standards

11

HPO-exceeds 35%

M6 on 2008 B01



TABLE 2: SOIL ANALYTICAL RESULTS

VOCS

456 Prior Street, Vancouver, BC

456 Prior Street Holdings Ltd.

Project #: 12349

July 2015

CSR IL Standards	CSR IL Standards	SAMPLE ID	Units	MW15-9 (1.8)	MW15-10 (1.8)	MW15-11 (1.2)	MW15-12 (1.2)	MW15-13 (1.2)	MW15-14 (1.2)	MW15-15 (1.8)
		DATE SAMPLED		10-Feb-15	10-Feb-15	17-Mar-15	17-Mar-15	17-Mar-15	17-Mar-15	17-Mar-15
		LAB CERTIFICATE		B511112	B511112	B521759	B521759	B521759	B521759	B521759
		LAB SAMPLE ID		LR2135	LR2138	LW9624	LW9628	LW9632	LW9637	LW9642
		SAMPLE DEPTH (mbg)		1.8	1.8	1.2	1.2	1.2	1.2	1.8
		SOIL DESCRIPTION								
		Non-Halogenated Aliphatics								
700	700	methyl tert-butyl ether	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10

Soil Exceedances

125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances

45%	RPD exceeds 35%
5>3	MS exceeds RDL

TABLE 3: SOIL ANALYTICAL RESULTS

INORGANICS

456 Prior Street, Vancouver, BC

456 Prior Street Holdings Ltd.

Project #: 12349

July 2015

CSR CL Standards	CSR IL Standards
n/s	n/s

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	MW14-1(0.6)	MW14-2(1.5)	MW14-5 (0.8)	MW14-C	RPD or MS for MW14-5 (0.6) and MW14-C	MW14-6 (0.8)	MW14-7 (3.1)	MW15-9 (1.8)	MW15-10 (1.8)	BH15-18 (0.6)	BH15-19 (0.6)
		10-Jul-14 B469514 KC1129 0.6	10-Jul-14 B469514 KC1136 1.5	11-Jul-14 B469514 KC1155 0.6	11-Jul-14 B469514 KC1161 Duplicate of MW14-5 (0.8)		11-Jul-14 B469514 KC1162 0.8	11-Jul-14 B469514 KC1171 3.1	10-Feb-15 B611112 LR2135 1.8	10-Feb-15 B611112 LR2138 1.8	14-May-15 B540152 MG1867 0.6	14-May-15 B540152 MG1869 0.6
pH	--	7.16	7.67	6.41	6.79	--	6.37	6.73	6.37	6.39	7.16	6.60

n/s	n/s
40	40
25a	15a
1500a	400a
8	8
2-100ab	1.5-150ab
700c	100acd
300	300
90-250ab	100-250abd
150-700ab	300-2000abd
1900Q	1900Q
40a	150a
40	40
500	500
10	10
40	40
100000	100000
300	300
n/s	n/s
n/s	n/s
150-600ab	150-600ab

Metals												
aluminum	µg/g	9780	17600	14200	12800	10%	20700	14600	--	10700	9070	11800
antimony	µg/g	0.16	0.72	8.22	5.9	6%	1.66	0.14	--	0.3	1.72	4.42
arsenic	µg/g	2.54	3.88	5.29	4.63	13%	4.98	1.55	--	2.71	2.04	2.16
barium	µg/g	41.1	140	150	152	1%	213	59	--	58.4	57.2	48.8
beryllium	µg/g	<0.40	<0.40	<0.40	<0.40	--	<0.40	<0.40	--	<0.40	<0.40	<0.40
cadmium	µg/g	0.197	0.158	1.07	0.75	35%	0.509	0.182	--	0.109	0.189	0.765
chromium (total)	µg/g	14.2	15.8	17.3	13.3	26%	20.2	16.2	--	10.9	10.7	10.4
cobalt	µg/g	6.48	5.14	6.01	4.93	20%	6.3	6.95	--	3.35	4.51	4.89
copper	µg/g	12	28.2	285	214	28%	32.4	19	--	12.3	18.3	2160
lead	µg/g	2.89	98.9	319	520	48%	127	2.86	30	43.2	39	13.6
manganese	µg/g	335	252	234	213	9%	252	250	--	132	158	168
mercury	µg/g	<0.050	0.196	0.354	0.22	0.134>0.05	0.063	<0.050	--	0.086	<0.050	0.247
molybdenum	µg/g	0.82	0.62	0.5	0.45	0.05<0.1	0.53	0.21	--	0.44	0.3	1.38
nickel	µg/g	19.6	11.8	21.2	22.4	6%	13.1	12	--	7.22	8.12	16.4
selenium	µg/g	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50	--	<0.50	<0.50	<0.50
silver	µg/g	<0.050	0.083	0.167	0.11	0.057>0.05	3.01	0.06	--	0.127	0.054	0.46
strontium	µg/g	28.3	78.8	37.3	31.1	18%	29.6	45.7	--	37.9	19.5	17.4
tin	µg/g	0.8	9.51	23	14.2	47%	2.93	0.23	--	2.16	1.96	0.49
titanium	µg/g	668	707	619	566	9%	790	906	--	460	426	550
vanadium	µg/g	41	43.7	43.7	39.2	11%	48.4	50.5	--	29.7	35.5	36.4
zinc	µg/g	37.7	68.8	409	307	28%	435	36.5	--	41.3	158	1210

Soil Exceedances

125
125

Exceeds CSR CL standards

Exceeds CSR IL standards

QA/QC Exceedances

45%
5>3

RPD exceeds 35%

MS exceeds RDL



TABLE 4: GROUNDWATER ANALYTICAL RESULTS

HYDROCARBONS
 456 Prior Street, Vancouver, BC
 456 Prior Street Holdings Ltd.
 Project #: 12349
 Jul-15

CSR AWF _M Standards	CSR AWM _M Standards
1500	1500
15000	15000
500	500
5000	5000
n/s	n/s
n/s	n/s

SAMPLE ID	Units	MW14-1	MW14-2	MW14-2	MW14-2	MW14-2	MW14-2	MW14-3	MW14-4	MW14-5	MW14-6	MW14-A	RPD or MS for
DATE SAMPLED		15-Jul-14	15-Jul-14	11-Feb-15	12-Mar-15	02-Jun-15	15-Jul-14	16-Jul-14	16-Jul-14	16-Jul-14	16-Jul-14	16-Jul-14	for
LAB CERTIFICATE		B469953	B469953	B511274	B520500	B546028	B469953	B469953	B469953	B469953	B469953	B469953	MW14-6
LAB SAMPLE ID		KC4032	KC4033	LR2904	LW2991	MJ2110	KC4034	KC4035	KC4036	KC4037	KC4039	KC4039	and
TOP OF SCREEN (mbg)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Duplicate of	MW14-A
BOTTOM OF SCREEN (mbg)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		

1500	1500
15000	15000
500	500
5000	5000
n/s	n/s
n/s	n/s

Petroleum Hydrocarbons													
VPHw	µg/L	--	<300	--	--	--	<300	3300	<300	--	--	--	--
VHW ₁₀	µg/L	--	<300	--	--	--	<300	4100	<300	--	--	--	--
LEPHw	µg/L	<200	<200	--	--	--	--	3300	<200	<200	<200	<200	--
EPHW ₀₋₁₉	µg/L	<200	<200	--	--	--	--	3400	<200	<200	<200	<200	--
HEPHw	µg/L	<200	<200	--	--	--	--	<200	<200		840	540	100-200
EPHW ₅₋₃₃	µg/L	<200	<200	--	--	--	--	<200	<200		840	540	100-200

4000	1000
2000	2500
720	720
390	3300
n/s	n/s

Monocyclic Aromatic Hydrocarbons													
benzene	µg/L	--	<0.40	--	--	--	<0.40	100	<0.40	--	--	--	--
ethylbenzene	µg/L	--	<0.40	--	--	--	<0.40	640		0.58	--	--	--
styrene	µg/L	--	<0.50	--	--	--	<0.50	<0.40	<0.50	--	--	--	--
toluene	µg/L	--	<0.40	--	--	--	<0.40	10	<0.40	--	--	--	--
xylene	µg/L	--	<0.40	--	--	--	<0.40	37	6.3	--	--	--	--

60	60
n/s	n/s
0.5	0.5
1	1
1	1
0.1	0.1
n/s	n/s
n/s	n/s
n/s	n/s
1	1
n/s	n/s
2	2
120	120
n/s	n/s
n/s	n/s
10	10
3	3
0.2	0.2
34	34
n/s	n/s
n/s	n/s
n/s	n/s

Polycyclic Aromatic Hydrocarbons													
acenaphthene	µg/L	<0.050	<0.050	--	--	--	--	0.28	0.057	1.1	1.3	17%	
acenaphthylene	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050	<0.050	<0.050		--
acridine	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050	<0.050	<0.050		--
anthracene	µg/L	<0.010	<0.010	--	--	--	--	<0.010	<0.010		0.16	0.14	13%
benzo[a]anthracene	µg/L	<0.010	0.011	--	--	--	--	<0.010	<0.010		0.11	0.073	40%
benzo[a]pyrene	µg/L	<0.0090	0.012	<0.0090	0.029	<0.0090	--	<0.0090	<0.0090		0.084	0.054	43%
benzo[b]fluoranthene	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050	<0.11		0.077	0.033-0.11
benzo[g,h,i]perylene	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050	<0.050	<0.050		--
benzo[k]fluoranthene	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050	<0.050	<0.050		--
chrysene	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050		0.16	0.12	0.04-0.05
dibenz[a,h]anthracene	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050	<0.050	<0.050		--
fluoranthene	µg/L	<0.020	0.027	--	--	--	--	<0.020	<0.020		0.36	0.3	18%
fluorene	µg/L	<0.050	<0.050	--	--	--	--	0.13	<0.050		0.62	0.62	0%
indeno[1,2,3-cd]pyrene	µg/L	<0.050	<0.050	--	--	--	--	<0.050	<0.050	<0.050	<0.050		--
methylnaphthalene, 2-	µg/L	<0.10	<0.10	--	--	--	--	92	0.42	1.6	1.6	1.6	0%
naphthalene	µg/L	<0.10	<0.10	--	--	--	--	110	1.3	2.7	2.8	2.8	4%
phenanthrene	µg/L	<0.050	<0.050	--	--	--	--	0.079	<0.050		0.76	0.72	5%
pyrene	µg/L	<0.020	0.026	--	--	--	--	<0.020	<0.020		0.37	0.29	24%
quinoline	µg/L	<0.24	<0.24	--	--	--	--	<0.24	<0.24	<0.24	<0.24	<0.24	--
Total HMW-PAHs	µg/L	<0.050	0.078	--	--	--	--	<0.050	<0.050		1.1	0.91	19%
Total LMW-PAHs	µg/L	<0.24	<0.24	--	--	--	--	200	1.8	6.9	7.1	7.1	3%
Total PAHs	µg/L	<0.24	<0.24	--	--	--	--	200	1.8	8	8	8	0%

Groundwater Exceedances

125
135
145

Exceeds CSR DW standards
 Exceeds CSR AWFW standards
 Exceeds CSR AWM standards

QA/QC Exceedances

2%
3%

RPD is less than 20%
 MS is more than 10%



TABLE 4: GROUNDWATER ANALYTICAL RESULTS

HYDROCARBONS
 456 Prior Street, Vancouver, BC
 456 Prior Street Holdings Ltd.
 Project #: 12349
 Jul-15

CSR AWF _{III} Standards	CSR AWM Standards
1500	1500
15000	15000
500	500
5000	5000
n/s	n/s
n/s	n/s

SAMPLE ID	Units	MW14-6	MW14-6	MW14-6	MW14-6	MW14-7	MW14-7	MW15-8	MW15-9	MW15-10	MW15-11	MW15-13
DATE SAMPLED		11-Feb-16	12-Mar-16	12-Mar-15	02-Jun-16	15-Jul-14	12-Mar-15	18-Feb-15	18-Feb-15	18-Feb-15	19-Mar-15	19-Mar-15
LAB CERTIFICATE		B511274	B620496	B520500	B546028	B459963	B520496	B513254	B513264	B513264	B522594	B522594
LAB SAMPLE ID		LR2905	LW2983	LW2982	MJ2111	KC4038	LW2984	LS3031	LS3032	LS3033	LX4164	LX4165
TOP OF SCREEN (mbg)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.2
BOTTOM OF SCREEN (mbg)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	2.1

Petroleum Hydrocarbons

	Units	MW14-6	MW14-6	MW14-6	MW14-6	MW14-7	MW14-7	MW15-8	MW15-9	MW15-10	MW15-11	MW15-13
VPHw	µg/L	<300	-	-	-	<300	720	3400	960	<300	<300	<300
VHW ₁₀	µg/L	<300	-	-	-	<300	770	5000	1000	<300	<300	<300
LEPHw	µg/L	-	-	-	-	<200	1800	4000	<200	<200	<200	<200
EPHW ₉₋₁₉	µg/L	-	-	-	-	<200	1800	4200	<200	<200	<200	<200
HEPHw	µg/L	-	-	-	-	<200	<200	<200	<200	<200	<200	<200
EPHW ₉₋₃₃	µg/L	-	-	-	-	<200	<200	<200	<200	<200	<200	<200

Monocyclic Aromatic Hydrocarbons

	Units	MW14-6	MW14-6	MW14-6	MW14-6	MW14-7	MW14-7	MW15-8	MW15-9	MW15-10	MW15-11	MW15-13
benzene	µg/L	<0.40	-	-	-	<0.40	3.8	230	32	<0.40	<0.40	<0.40
ethylbenzene	µg/L	<0.40	-	-	-	<0.40	34	730	5.7	<0.40	<0.40	<0.40
styrene	µg/L	<0.40	-	-	-	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
toluene	µg/L	<0.40	-	-	-	<0.40	1.5	20	2.9	<0.40	<0.40	<0.40
xylene	µg/L	<0.40	-	-	-	<0.40	7.8	560	30	<0.40	<0.40	<0.40

Polycyclic Aromatic Hydrocarbons

	Units	MW14-6	MW14-6	MW14-6	MW14-6	MW14-7	MW14-7	MW15-8	MW15-9	MW15-10	MW15-11	MW15-13
acenaphthene	µg/L	-	-	-	-	<0.050	0.31	0.28	0.22	<0.050	<0.050	<0.050
acenaphthylene	µg/L	-	-	-	-	<0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050
acridine	µg/L	-	-	-	-	<0.050	-	<0.050	<0.050	<0.050	<0.050	<0.050
anthracene	µg/L	-	-	-	-	0.018	0.025	0.021	0.084	<0.010	<0.010	<0.010
benzo[a]anthracene	µg/L	-	-	-	-	0.031	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
benzo[a]pyrene	µg/L	0.041	-	0.022	0.013	0.026	<0.0090	<0.0090	<0.0090	<0.0090	<0.0090	<0.0090
benzo[b]fluoranthene	µg/L	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo[g,h,i]perylene	µg/L	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
benzo[k]fluoranthene	µg/L	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
chrysene	µg/L	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
dibenz[a,h]anthracene	µg/L	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
fluoranthene	µg/L	-	-	-	-	0.088	<0.020	0.048	0.076	<0.020	<0.020	<0.020
fluorene	µg/L	-	-	-	-	<0.050	0.16	0.16	0.25	<0.050	<0.050	<0.050
indeno[1,2,3-cd]pyrene	µg/L	-	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
methylnaphthalene, 2-	µg/L	-	-	-	-	<0.10	8.3	100	1.9	<0.10	<0.10	<0.10
naphthalene	µg/L	-	-	-	-	<0.10	<3.1	190	2	<0.10	<0.10	<0.10
phenanthrene	µg/L	-	-	-	-	0.12	0.077	0.12	0.33	<0.050	<0.050	<0.050
pyrene	µg/L	0.12	-	0.065	-	0.087	<0.020	0.044	0.066	<0.020	<0.020	<0.020
quinoline	µg/L	-	-	-	-	<0.24	<0.41	<0.70	<0.24	<0.24	<0.24	<0.24
Total HMW-PAHs	µg/L	-	-	-	-	0.23	<0.050	0.091	0.14	<0.050	<0.050	<0.050
Total LMW-PAHs	µg/L	-	-	-	-	<0.24	6.9	290	4.8	<0.24	<0.24	<0.24
Total PAHs	µg/L	-	-	-	-	0.36	6.9	290	4.9	<0.24	<0.24	<0.24

Groundwater Exceedances

125
135
145

Exceeds CSR DW standards
 Exceeds CSR AWF_{III} standards
 Exceeds CSR AWM standards

QA/QC Exceedances

205
215

RPO exceeds 20%
 M3 exceeds 10%



TABLE 4: GROUNDWATER ANALYTICAL RESULTS

HYDROCARBONS
 456 Prior Street, Vancouver, BC
 456 Prior Street Holdings Ltd.
 Project #: 12349
 Jul-15

CSR AWW _{FDI} Standards	CSR AWM _{II} Standards
-------------------------------------	------------------------------------

1500	1500
15000	15000
500	500
5000	5000
n/s	n/s
n/s	n/s

4000	1000
2000	2500
720	720
390	3300
n/s	n/s

60	60
n/s	n/s
0.5	0.5
1	1
1	1
0.1	0.1
n/s	n/s
n/s	n/s
n/s	n/s
1	1
n/s	n/s
2	2
120	120
n/s	n/s
n/s	n/s
10	10
3	3
0.2	0.2
34	34
n/s	n/s
n/s	n/s
n/s	n/s

SAMPLE ID	Units	MW 15-14	MW15-16	MW15-17
DATE SAMPLED		19-Mar-15	19-Mar-15	15-May-15
LAB CERTIFICATE		B522594	B522594	B540530
LAB SAMPLE ID		LX4166	LX4167	MG3596
TOP OF SCREEN (mbg)		1.2	1.2	0.0
BOTTOM OF SCREEN (mbg)		2.4	2.4	0.0

Petroleum Hydrocarbons				
VPHw	µg/L	<300	<300	<300
VHW ₁₀	µg/L	<300	<300	<300
LEPHw	µg/L	<200	<200	<200
EPHW ₉₋₁₉	µg/L	<200	<200	<200
HEPHw	µg/L	<200	<200	<200
EPHW ₅₋₃₃	µg/L	<200	<200	<200

Monocyclic Aromatic Hydrocarbons				
benzene	µg/L	<0.40	5.8	1.2
ethylbenzene	µg/L	<0.40	1.3	2.5
styrene	µg/L	<0.40	<0.40	<0.50
toluene	µg/L	<0.40	0.99	<0.40
xylene	µg/L	<0.40	7.1	2.1

Polycyclic Aromatic Hydrocarbons				
acenaphthene	µg/L	0.055	0.093	<0.050
acenaphthylene	µg/L	<0.050	<0.050	<0.050
acridine	µg/L	<0.050	<0.050	<0.050
anthracene	µg/L	0.01	0.01	<0.010
benzo[a]anthracene	µg/L	<0.010	<0.010	<0.010
benzo[a]pyrene	µg/L	<0.0090	<0.0090	<0.0090
benzo[b+j]fluoranthene	µg/L	<0.050	<0.050	<0.050
benzo[g,h,i]perylene	µg/L	<0.050	<0.050	<0.050
benzo[k]fluoranthene	µg/L	<0.050	<0.050	<0.050
chrysene	µg/L	<0.050	<0.050	<0.050
dibenz[a,h]anthracene	µg/L	<0.050	<0.050	<0.050
fluoranthene	µg/L	0.036	0.036	0.027
fluorene	µg/L	<0.050	<0.050	<0.050
indeno[1,2,3-cd]pyrene	µg/L	<0.050	<0.050	<0.050
methylnaphthalene, 2-	µg/L	<0.10	0.25	2.2
naphthalene	µg/L	<0.10	<0.48	1.5
phenanthrene	µg/L	0.059	0.065	0.052
pyrene	µg/L	0.028	0.028	0.035
quinoline	µg/L	<0.24	<0.24	<0.24
Total HMW-PAHs	µg/L	0.064	0.064	0.062
Total LMW-PAHs	µg/L	<0.24	<0.48	3.8
Total PAHs	µg/L	<0.24	0.49	3.6

Groundwater Exceedances

125
135
145

Exceeds CSR DW standards
 Exceeds CSR AWW standards
 Exceeds CSR AWM standards

QA/QC Exceedances

205
215

RPD exceeds 20%
 MS exceeds RCL



TABLE 5: GROUNDWATER ANALYTICAL RESULTS

VOCS

456 Prior Street, Vancouver, BC
 456 Prior Street Holdings Ltd.
 Project #: 12349
 Jul-15

CSR AWF _{III} Standards	CSR AWM _{II} Standards
-------------------------------------	------------------------------------

n/s	n/s
n/s	n/s
n/s	n/s
130	130
n/s	n/s
20	20
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
1000	1000
n/s	n/s
n/s	n/s
n/s	n/s
980	980
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
200	200
n/s	n/s
n/s	n/s

n/s	n/s
7	420
1500	1500
280	280
13	120

n/s	n/s
n/s	n/s
n/s	n/s

SAMPLE ID	Units	MW14-2	MW14-3	MW14-5	MW15-17
DATE SAMPLED		15-Jul-14	15-Jul-14	15-Jul-14	15-May-15
LAB CERTIFICATE		B469953	B469953	B469953	B540530
LAB SAMPLE ID		KC4033	KC4034	KC4036	MG3596
TOP OF SCREEN (mbg)		0.0	0.0	0.0	0.0
BOTTOM OF SCREEN (mbg)		0.0	0.0	0.0	0.0

Halogenated Aliphatics					
bromodichloromethane	µg/L	<1.0	<1.0	<1.0	<1.0
bromoform	µg/L	<1.0	<1.0	<1.0	<1.0
bromomethane	µg/L	<1.0	<1.0	<1.0	<1.0
carbon tetrachloride	µg/L	<0.50	<0.50	<0.50	<0.50
chloroethane	µg/L	<1.0	<1.0	<1.0	<1.0
chloroform	µg/L	<1.0	<1.0	<1.0	16
chloromethane	µg/L	<1.0	<1.0	<1.0	<1.0
dibromochloromethane	µg/L	<1.0	<1.0	<1.0	<1.0
dibromoethane, 1,2-	µg/L	<0.20	<0.20	<0.20	<0.20
dibromomethane	µg/L	<0.90	<0.90	<0.90	<0.90
dichlorodifluoromethane	µg/L	<2.0	<2.0	<2.0	<2.0
dichloroethane, 1,1-	µg/L	<0.50	<0.50	<0.50	<0.50
dichloroethane, 1,2-	µg/L	<0.50	<0.50	<0.50	<0.50
dichloroethene, 1,1-	µg/L	<0.50	<0.50	<0.50	<0.50
dichloroethene, 1,2- (cis)	µg/L	<1.0	<1.0	<1.0	<1.0
dichloroethene, 1,2- (trans)	µg/L	<1.0	<1.0	<1.0	<1.0
dichloromethane	µg/L	<2.0	<2.0	<2.0	<2.0
dichloropropane, 1,2-	µg/L	<0.50	<0.50	<0.50	<0.50
dichloropropene, 1,3- (cis)	µg/L	<1.0	<1.0	<1.0	<1.0
dichloropropene, 1,3- (trans)	µg/L	<1.0	<1.0	<1.0	<1.0
tetrachloroethane, 1,1,1,2-	µg/L	<0.50	<0.50	<0.50	<0.50
tetrachloroethane, 1,1,2,2-	µg/L	<0.50	<0.50	<0.50	<0.50
tetrachloroethene	µg/L	<0.50	<0.50	<0.50	<0.50
trichloro-1,2,2-trifluoroethane, 1,1,2-	µg/L	<2.0	<2.0	<2.0	<2.0
trichloroethane, 1,1,1-	µg/L	<0.50	<0.50	<0.50	<0.50
trichloroethane, 1,1,2-	µg/L	<0.50	<0.50	<0.50	<0.50
trichloroethene	µg/L	<0.50	<0.50	<0.50	<0.50
trichlorofluoromethane	µg/L	<4.0	<4.0	<4.0	<4.0
vinyl chloride	µg/L	<0.50	<0.50	<0.50	<0.50

Halogenated Aromatics					
bromobenzene	µg/L	<2.0	<2.0	<2.0	<2.0
dichlorobenzene, 1,2-	µg/L	<0.50	<0.50	<0.50	<0.50
dichlorobenzene, 1,3-	µg/L	<0.50	<0.50	<0.50	<0.50
dichlorobenzene, 1,4-	µg/L	<0.50	<0.50	<0.50	<0.50
monochlorobenzene	µg/L	<0.50	<0.50	<0.50	<0.50

Non-Halogenated Aliphatics					
butadiene, 1,3-	µg/L	<5.0	<5.0	<5.0	<5.0
butane, 2-	µg/L	<10	<10	<10	<10
metha-2-pentane, 2-	µg/L	<10	<10	<10	<10

Groundwater Exceedences

12n
13s
13c

Exceeds CSR DW standards
 Exceeds CSR AWFW standards
 Exceeds CSR AWM standards

QA/QC Exceedences

25n
25c

RPO exceeds 25n
 NS exceeds 25c



TABLE 6: GROUNDWATER ANALYTICAL RESULTS

INORGANICS

456 Prior Street, Vancouver, BC

456 Prior Street Holdings Ltd.

Project #: 12349

Jul-15

CSR AWF _M Standards	CSR AWM Standards
n/s	n/s

SAMPLE ID	Units	MW14-1	MW14-2	MW14-4	MW14-5	MW14-6	MW14-A	RPD or MS
DATE SAMPLED		15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	for
LAB CERTIFICATE		B469953	B469953	B469953	B469953	B469953	B469953	MW14-6
LAB SAMPLE ID		KC4032	KC4033	KC4035	KC4036	KC4037	KC4039	and
TOP OF SCREEN (mbg)		0.0	0.0	0.0	0.0	0.0	Duplicate of	MW14-A
BOTTOM OF SCREEN (mbg)		0.0	0.0	0.0	0.0	0.0		
hardness	mg/L	57.2	330	117	233	260	262	---

n/s	n/s
200	200
50	125
10000	5000
53	1000
n/s	n/s
50000	50000
0.1-1.3a	1
n/s	n/s
10	150
40	40
20-80a	20
n/s	n/s
40-180a	20
n/s	n/s
n/s	n/s
n/s	n/s
1	1
10000	10000
250-1500a	83
n/s	n/s
10	540
n/s	n/s
0.5-15a	15
n/s	n/s
n/s	n/s
n/s	n/s
3	3
n/s	n/s
1000	1000
3000	1000
n/s	n/s
75-3150a	100
n/s	n/s

Dissolved Metals									
aluminum	µg/L	28.6	11.3	46.7	365	17.5	17.2	2%	
antimony	µg/L	0.74	0.59	<0.50	0.79	<0.50	<0.50	--	
arsenic	µg/L	0.3	1.19	1.65	0.76	3.78	3.72	2%	
barium	µg/L	12.7	90.6	48.6	53	213	221	4%	
beryllium	µg/L	<0.10	<0.10	<0.10	0.11	<0.10	<0.10	--	
bismuth	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	
beron	µg/L	<50	593	77	400	93	88	5<50	
cadmium	µg/L	0.016	0.1	0.085	0.051	<0.010	<0.010	--	
calcium	µg/L	19900	117000	35300	79000	88200	91000	2%	
chromium (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	
cobalt	µg/L	1.09	4.59	15.2	17.9	10.7	9.94	7%	
copper	µg/L	1.6	0.62	0.4	2.97	0.24	0.23	0.01<0.2	
iron	µg/L	5	2960	5230	1380	22800	23400	3%	
lead	µg/L	<0.20	<0.20	10.5	<0.20	<0.20	<0.20	--	
lithium	µg/L	<5.0	<5.0	<5.0	10.5	<5.0	<5.0	--	
magnesium	µg/L	1790	8980	8910	14300	8970	8520	5%	
manganese	µg/L	155	1150	1930	2180	3530	3580	1%	
mercury	µg/L	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	--	
molybdenum	µg/L	14.7	1.5	<1.0	<1.0	1.3	1.3	0<1	
nickel	µg/L	1.2	5.8	16.4	32.2	7.4	7.4	0%	
potassium	µg/L	2490	6540	3510	5050	6140	6050	1%	
selenium	µg/L	0.11	0.17	0.17	0.21	<0.10	<0.10	--	
silicon	µg/L	4270	7500	7770	10600	11100	11600	4%	
silver	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	--	
sodium	µg/L	4860	17400	12400	34200	12600	12200	3%	
strontium	µg/L	77.5	983	193	318	611	591	3%	
sulphur	µg/L	<3000	11000	28700	28800	27900	29600	6%	
thallium	µg/L	<0.050	<0.050	0.103	0.148	<0.050	<0.050	--	
tin	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	
titanium	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	
uranium	µg/L	<0.10	0.6	<0.10	0.56	0.22	0.22	0<0.1	
vanadium	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	
zinc	µg/L	<5.0	6.2	8.8	18	<5.0	<5.0	--	
zirconium	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	

Groundwater Exceedances

125
135
145

Exceeds CSR DW standards
Exceeds CSR AWFW standards
Exceeds CSR AWM standards

QA/QC Exceedances

2%
3%

RPD exceeds 20%
MS exceeds RCI



TABLE 6: GROUNDWATER ANALYTICAL RESULTS

INORGANICS

456 Prior Street, Vancouver, BC
 456 Prior Street Holdings Ltd.
 Project #: 12349
 Jul-15

CSR AWF _M Standards	CSR AWM _M Standards
n/s	n/s

n/s	n/s
200	200
50	125
10000	5000
53	1000
n/s	n/s
50000	50000
0.1-1.3a	1
n/s	n/s
10	150
40	40
20-80a	20
n/s	n/s
40-180a	20
n/s	n/s
n/s	n/s
1	1
10000	10000
250-1500a	83
n/s	n/s
10	540
n/s	n/s
0.5-15a	15
n/s	n/s
n/s	n/s
n/s	n/s
3	3
n/s	n/s
1000	1000
3000	1000
n/s	n/s
75-3150a	100
n/s	n/s

SAMPLE ID	Units	MW14-7	MW16-8	MW16-9	MW16-10	MW16-11	MW16-13	MW16-14	MW16-15
DATE SAMPLED		15-Jul-14	18-Feb-16	18-Feb-16	18-Feb-16	19-Mar-16	19-Mar-16	19-Mar-16	19-Mar-16
LAB CERTIFICATE		B469853	B613254	B613254	B613254	B622694	B622694	B622694	B622694
LAB SAMPLE ID		KC4038	LS3031	LS3032	LS3033	LX4164	LX4165	LX4166	LX4167
TOP OF SCREEN (mbg)		0.0	0.0	0.0	0.0	0.9	1.2	1.2	1.2
BOTTOM OF SCREEN (mbg)		0.0	0.0	0.0	0.0	2.4	2.1	2.4	2.4
hardness	mg/L	76.6	373	113	89	6.4	6.4	6.2	6.3

Dissolved Metals									
aluminum	µg/L	153	--	--	--	--	--	--	--
antimony	µg/L	<0.50	--	--	--	--	--	--	--
arsenic	µg/L	1	--	--	--	--	--	--	--
barium	µg/L	129	--	--	--	--	--	--	--
beryllium	µg/L	<0.10	--	--	--	--	--	--	--
bismuth	µg/L	<1.0	--	--	--	--	--	--	--
beron	µg/L	<50	--	--	--	--	--	--	--
cadmium	µg/L	0.178	--	--	--	--	--	--	--
calcium	µg/L	23600	--	--	--	--	--	--	--
chromium (total)	µg/L	<1.0	--	--	--	--	--	--	--
cobalt	µg/L	9.29	--	--	--	--	--	--	--
copper	µg/L	1.77	--	--	--	--	--	--	--
iron	µg/L	215	--	--	--	--	--	--	--
lead	µg/L	<0.20	10.8	2.2	<0.20	<0.20	<0.20	0.35	0.58
lithium	µg/L	<5.0	--	--	--	--	--	--	--
magnesium	µg/L	4280	--	--	--	--	--	--	--
manganese	µg/L	943	--	--	--	--	--	--	--
mercury	µg/L	<0.010	--	--	--	--	--	--	--
molybdenum	µg/L	<1.0	--	--	--	--	--	--	--
nickel	µg/L	14.1	--	--	--	--	--	--	--
potassium	µg/L	1490	--	--	--	--	--	--	--
selenium	µg/L	<0.10	--	--	--	--	--	--	--
silicon	µg/L	7310	--	--	--	--	--	--	--
silver	µg/L	<0.020	--	--	--	--	--	--	--
sodium	µg/L	5830	--	--	--	--	--	--	--
strontium	µg/L	174	--	--	--	--	--	--	--
suiphur	µg/L	16500	--	--	--	--	--	--	--
thallium	µg/L	<0.050	--	--	--	--	--	--	--
tin	µg/L	<5.0	--	--	--	--	--	--	--
titanium	µg/L	<5.0	--	--	--	--	--	--	--
uranium	µg/L	<0.10	--	--	--	--	--	--	--
vanadium	µg/L	<5.0	--	--	--	--	--	--	--
zinc	µg/L	11	--	--	--	--	--	--	--
zirconium	µg/L	<0.50	--	--	--	--	--	--	--

Groundwater Exceedances

125
125
125

Exceeds CSR DW standards
 Exceeds CSR AWF_M standards
 Exceeds CSR AWM_M standards

QA/QC Exceedances

20%
20%
20%

RPO exceeds 20%
 MS exceeds 20%



TABLE 7: SOIL ANALYTICAL RESULTS

HYDROCARBONS/VOCs
 456 Prior Street
 456 Prior Street Holdings Ltd.
 Project #: 12349
 July 2015

CSR CL Standards	CSR IL Standards	SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	CS15-1 (1.8) 03-Feb-16 B608872 LQ0462 1.8	CS15-2 (1.8) 03-Feb-16 B608872 LQ0463 1.8	CS15-3 (1.8) 03-Feb-16 B608872 LQ0464 1.8	CS15-4 (1.8) 03-Feb-16 B608872 LQ0465 1.8	CS15-A 03-Feb-16 B608872 LQ0467 Duplicate of CS15-4 (1.8)	RPD or MS for CS15-4 (1.8) and CS15-A	CS15-5 (2.7) 03-Feb-16 B608872 LQ0466 2.7	CS15-6(1.8) 01-Jun-15 B646416 M8361 1.8	CS15-7(2.7) 01-Jun-15 B646416 M8362 2.7	CS15-9 (1.8) 02-Jun-16 B646024 MJ2099 1.8
Petroleum Hydrocarbons													
n/s	n/s	Waste Oil	µg/g	200	200	200	200	235	18%	200	--	--	--
200	200	VPHs	µg/g	<10	<10	<10		55	35	20>10	<10	<10	23
200e	200e	VHS ₅₋₁₀	µg/g	<10	<10	<10		56	36	20>10	<10	<10	24
2000	2000	LEPHs	µg/g	<100	<100	<100	<100	108	8<100	<100	--	--	--
2000e	2000e	EPHs ₁₀₋₁₅	µg/g	<100	<100	<100	<100	109	9<100	<100	--	--	--
5000	5000	HEPHs	µg/g	<100	<100	<100	<100	127	27<100	<100	--	--	--
5000e	5000e	EPHs ₁₉₋₃₂	µg/g	<100	<100	<100	<100	128	28<100	<100	--	--	--
Monocyclic Aromatic Hydrocarbons													
2.5a	2.5a	benzene	µg/g	<0.0050	0.06	0.014	0.12	0.1	18%	<0.0050	<0.0050	<0.0050	0.03
20a	20a	ethylbenzene	µg/g	<0.010	0.22	0.011	0.29	0.2	37%	<0.010	<0.010	<0.010	0.92
50	50	styrene	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	--	<0.030	<0.030	<0.030	<0.030
25a	25a	toluene	µg/g	<0.020	<0.020	<0.020	0.046	0.035	0.011<0.02	<0.020	<0.020	<0.020	<0.020
50	50	xylenes	µg/g	<0.040	0.57	0.11	1.3	0.78	56%	<0.040	<0.040	<0.040	0.13
Non-Halogenated Aliphatics													
700	700	methyl tert-butyl ether	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	--	<0.10	--	--	--
Polycyclic Aromatic Hydrocarbons													
n/s	n/s	acenaphthene	µg/g	<0.050	<0.050	<0.050	<0.050	0.05	0<0.05	<0.050	--	--	--
n/s	n/s	acenaphthylene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
n/s	n/s	anthracene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
10	10	benzo[a]anthracene	µg/g	<0.050	<0.050	<0.050	0.057	0.068	0.031<0.05	<0.050	--	--	--
10a	10a	benzo[a]pyrene	µg/g	<0.050	<0.050	<0.050	0.071	0.09	0.019<0.05	<0.050	--	--	--
10	10	benzo[b]fluoranthene	µg/g	<0.050	<0.050	<0.050	0.08	0.069	0.0000000000001<	<0.050	--	--	--
10	10	benzo[k]fluoranthene	µg/g	<0.050	<0.050	<0.050	0.096	0.12	0.024<0.05	<0.050	--	--	--
n/s	n/s	benzo[g,h,i]perylene	µg/g	<0.050	<0.050	<0.050	0.056	0.068	0.012<0.05	<0.050	--	--	--
10	10	benzo[k]fluoranthene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
n/s	n/s	chrysene	µg/g	<0.050	<0.050	<0.050	0.07	0.1	0.03<0.05	<0.050	--	--	--
10	10	dibenz[a,h]anthracene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
n/s	n/s	fluoranthene	µg/g	<0.050	<0.050	0.061	0.075	0.2	0.126<0.05	<0.050	--	--	--
n/s	n/s	fluorene	µg/g	<0.050	<0.050	<0.050	<0.050	0.064	0.004<0.05	<0.050	--	--	--
10	10	indeno[1,2,3-cd]pyrene	µg/g	<0.050	<0.050	<0.050	<0.050	0.059	0.999999999999999<	<0.050	--	--	--
n/s	n/s	methylnaphthalene, 2-	µg/g	<0.050	0.052	0.27	0.25	1.7	1.49%	<0.050	--	--	--
50	50	naphthalene	µg/g	<0.050	0.11	0.29	0.14	0.88	0.74<0.05	<0.050	--	--	--
n/s	n/s	PAH TEQ	µg/g	0.085	0.085	0.085	0.1177	0.1475	22%	0.085	--	--	--
50	50	phenanthrene	µg/g	<0.050	<0.050	<0.050	<0.050	0.16	0.11<0.05	<0.050	--	--	--
100	100	pyrene	µg/g	<0.050	<0.050	0.054	0.079	0.21	0.131<0.05	<0.050	--	--	--
n/s	n/s	Total H/MW-PAHs	µg/g	<0.050	<0.050	0.1	0.5	0.93	60%	<0.050	--	--	--
n/s	n/s	Total LMW-PAHs	µg/g	<0.050	0.16	0.55	0.39	2.9	153%	<0.050	--	--	--
n/s	n/s	Total PAHs	µg/g	<0.050	0.16	0.65	0.80	3.8	124%	<0.050	--	--	--

Soil Exceedances:

13a
17a

Exceeds CSR (I) standards
 Exceeds CSR (L) standards

QA/QC Exceedances:

4%
5-7

RPD exceeds 35%
 MS exceeds RDL



TABLE 7: SOIL ANALYTICAL RESULTS

HYDROCARBONS/VOCs
 456 Prior Street
 456 Prior Street Holdings Ltd.
 Project #: 12349
 July 2015

CSR CL Standards	CSR IL Standards
------------------	------------------

n/s	n/s
200	200
200e	200e
2000	2000
2000e	2000e
5000	5000
5000e	5000e

2.5a	2.5a
20a	20a
50	50
25a	25a
50	50

700	700
-----	-----

n/s	n/s
n/s	n/s
n/s	n/s
10	10
10a	10a
10	10
10	10
n/s	n/s
10	10
n/s	n/s
10	10
n/s	n/s
n/s	n/s
n/s	n/s
10	10
n/s	n/s
50	50
n/s	n/s
50	50
100	100
n/s	n/s
n/s	n/s
n/s	n/s

SAMPLE ID	Units	CS15-10 (1.5)	CS15-11 (1.5)	CS15-13 (1.5)
DATE SAMPLED		02-Jun-16	02-Jun-16	02-Jun-16
LAB CERTIFICATE		B546024	B546024	B546024
LAB SAMPLE ID		MJ2100	MJ2101	MJ2103
SAMPLE DEPTH (mbg)		1.5	1.5	1.5
SOIL DESCRIPTION				

Petroleum Hydrocarbons				
Waste Oil	µg/g	--	--	--
VPHs	µg/g	<10	<10	22
VHS ₁₀₋₁₀	µg/g	<10	<10	23
LEPHs	µg/g	--	--	--
EPHs ₁₀₋₁₅	µg/g	--	--	--
HCPHs	µg/g	--	--	--
EPHs ₁₀₋₃₂	µg/g	--	--	--

Monocyclic Aromatic Hydrocarbons				
benzene	µg/g	<0.0050	<0.0050	0.17
ethylbenzene	µg/g	<0.010	0.019	0.36
styrene	µg/g	<0.030	<0.030	<0.030
toluene	µg/g	<0.020	<0.020	0.067
xylene	µg/g	<0.040	<0.040	0.75

Non-Halogenated Aliphatics				
methyl tert-butyl ether	µg/g	--	--	--

Polycyclic Aromatic Hydrocarbons				
acenaphthene	µg/g	--	--	--
acenaphthylene	µg/g	--	--	--
anthracene	µg/g	--	--	--
benzo[a]anthracene	µg/g	--	--	--
benzo[a]pyrene	µg/g	--	--	--
benzo[b]fluoranthene	µg/g	--	--	--
benzo[b]fluoranthene	µg/g	--	--	--
benzo[g,h,i]perylene	µg/g	--	--	--
benzo[k]fluoranthene	µg/g	--	--	--
chrysene	µg/g	--	--	--
dibenz[a,h]anthracene	µg/g	--	--	--
fluoranthene	µg/g	--	--	--
fluorene	µg/g	--	--	--
indeno[1,2,3-cd]pyrene	µg/g	--	--	--
methylnaphthalene, 2-	µg/g	--	--	--
naphthalene	µg/g	--	--	--
PAH TEQ	µg/g	--	--	--
phenanthrene	µg/g	--	--	--
pyrene	µg/g	--	--	--
Total HMW-PAHs	µg/g	--	--	--
Total LMW-PAHs	µg/g	--	--	--
Total PAHs	µg/g	--	--	--

Soil Exceedances

13a
17a

Exceeds CSR (I, standards)
 Exceeds CSR (L, standards)

QA/QC Exceedances

43%
5-7

RPD exceeds 35%
 MS exceeds RDL



**TABLE 8: SOIL ANALYTICAL RESULTS
HYDROCARBONS/VOCs**

456 Prior Street, Vancouver, BC
456 Prior Street Holdings Ltd.
Project #: 12349
July 2015

CSR CL Standards	CSR IL Standards	SAMPLE ID	Units	CS15-1 (1.8)	CS15-2 (1.8)	CS15-3 (1.8)	CS15-4 (1.8)	CS15-A	RPD or MS	CS15-5 (2.7)	CS15-6(1.8)	CS15-7(2.7)	CS15-9 (1.8)
		DATE SAMPLED		03-Feb-15	03-Feb-15	03-Feb-15	03-Feb-15	03-Feb-15	for	03-Feb-15	01-Jun-15	01-Jun-15	02-Jun-15
		LAB CERTIFICATE		B508872	B508872	B508872	B508872	B508872	CS15-4 (1.8)	B508872	B545416	B545416	B546024
		LAB SAMPLE ID		LQ0462	LQ0463	LQ0464	LQ0465	LQ0467	and	LQ0466	MI9361	MI9362	MJ2099
		SAMPLE DEPTH (m bg)		1.8	1.8	1.8	1.8	Duplicate of CS15-4 (1.8)	CS15-A	2.7	1.8	2.7	1.8
		SOIL DESCRIPTION											
Petroleum Hydrocarbons													
200	200	VPHs	µg/g	<10	<10	<10	65	36	20-10	<10	<10	<10	23
200e	200e	VH ₁₀₋₁₀	µg/g	<10	<10	<10	66	36	20-10	<10	<10	<10	24
2000	2000	LEPHs	µg/g	<100	<100	<100	<100	108	8<100	<100	--	--	--
2000e	2000e	EPH ₁₀₋₁₅	µg/g	<100	<100	<100	<100	109	9<100	<100	--	--	--
5000	5000	HEPHs	µg/g	<100	<100	<100	<100	127	27<100	<100	--	--	--
5000e	5000e	EPH ₁₅₋₂₂	µg/g	<100	<100	<100	<100	128	28<100	<100	--	--	--
Monocyclic Aromatic Hydrocarbons													
2.5a	2.5a	benzene	µg/g	<0.0050	0.06	0.014	0.12	0.1	18%	<0.0050	<0.0050	<0.0050	0.03
20a	20a	ethylbenzene	µg/g	<0.010	0.22	0.011	0.29	0.2	37%	<0.010	<0.010	<0.010	0.92
50	50	styrene	µg/g	<0.030	<0.030	<0.030	<0.030	<0.030	--	<0.030	<0.030	<0.030	<0.030
25a	25a	toluene	µg/g	<0.020	<0.020	<0.020	0.046	0.035	0.011<0.02	<0.020	<0.020	<0.020	<0.020
50	50	xylene	µg/g	<0.040	0.57	0.11	1.3	0.78	50%	<0.040	<0.040	<0.040	0.13
Non-Halogenated Aliphatics													
700	700	methyl tert-butyl ether	µg/g	<0.10	<0.10	<0.10	<0.10	<0.10	--	<0.10	--	--	--
Polycyclic Aromatic Hydrocarbons													
n/s	n/s	acenaphthene	µg/g	<0.050	<0.050	<0.050	<0.050	0.05	0<0.05	<0.050	--	--	--
n/s	n/s	acenaphthylene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
n/s	n/s	anthracene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
10	10	benzo[a]anthracene	µg/g	<0.050	<0.050	<0.050	0.057	0.088	0.031<0.05	<0.050	--	--	--
10a	10a	benzo[a]pyrene	µg/g	<0.050	<0.050	<0.050	0.071	0.09	0.019<0.05	<0.050	--	--	--
10	10	benzo[b]fluoranthene	µg/g	<0.050	<0.050	<0.050	0.06	0.089	0.009<0.05	<0.050	--	--	--
10	10	benzo[k]fluoranthene	µg/g	<0.050	<0.050	<0.050	0.096	0.12	0.024<0.05	<0.050	--	--	--
n/s	n/s	benzo[g,h,i]perylene	µg/g	<0.050	<0.050	<0.050	0.058	0.088	0.012<0.05	<0.050	--	--	--
10	10	benzo[k]fluoranthene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
n/s	n/s	chrysene	µg/g	<0.050	<0.050	<0.050	0.07	0.1	0.03<0.05	<0.050	--	--	--
10	10	dibenz[a,h]anthracene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	--	--	--
n/s	n/s	fluoranthene	µg/g	<0.050	<0.050	0.051	0.075	0.2	0.126<0.05	<0.050	--	--	--
n/s	n/s	fluorene	µg/g	<0.050	<0.050	<0.050	<0.050	0.054	0.004<0.05	<0.050	--	--	--
10	10	indeno[1,2,3-cd]pyrene	µg/g	<0.050	<0.050	<0.050	<0.050	0.059	0.009<0.05	<0.050	--	--	--
n/s	n/s	methylnaphthalene, 2-	µg/g	<0.050	0.052	0.27	0.25	1.7	149%	<0.050	--	--	--
50	50	naphthalene	µg/g	<0.050	0.11	0.26	0.14	0.88	0.74<0.05	<0.050	--	--	--
50	50	phenanthrene	µg/g	<0.050	<0.050	<0.050	<0.050	0.16	0.11<0.05	<0.050	--	--	--
100	100	pyrene	µg/g	<0.050	<0.050	0.054	0.079	0.21	0.131<0.05	<0.050	--	--	--
n/s	n/s	Total HMW-PAHs	µg/g	<0.050	<0.050	0.1	0.5	0.93	80%	<0.050	--	--	--
n/s	n/s	Total LMW-PAHs	µg/g	<0.050	0.18	0.55	0.39	2.9	153%	<0.050	--	--	--
n/s	n/s	Total PAHs	µg/g	<0.050	0.18	0.65	0.88	3.8	124%	<0.050	--	--	--

Soil Exceedances

125
125

Exceeds CSR CL standards
Exceeds CSR IL standards

QA/QC Exceedances

43%
1/3

RPD exceeds 25%
RPD exceeds RDL



**TABLE 8: SOIL ANALYTICAL RESULTS
HYDROCARBONS/VOCs**

456 Prior Street, Vancouver, BC
456 Prior Street Holdings Ltd.
Project #: 12349
July 2015

CSR CL Standards	CSR IL Standards	SAMPLE ID	Units	CS15-10 (1.5)	CS15-11 (1.5)	CS15-A	RPD or MS	CS15-13 (1.5)
		DATE SAMPLED		02-Jun-15	02-Jun-15	02-Jun-15	for	02-Jun-15
		LAB CERTIFICATE		B546024	B546024	B546024	CS15-4 (1.8)	B546024
		LAB SAMPLE ID		MJ2100	MJ2101	K003661	and	MJ2103
		SAMPLE DEPTH (m bg)		1.5	1.5	Duplicate of	CS15-A	1.5
		SOIL DESCRIPTION				CS15-11 (1.5)		
Petroleum Hydrocarbons								
200	200	VPHs	µg/g	<10	<10	<10	—	22
200e	200e	VH ₉₋₁₀	µg/g	<10	<10	<10	—	23
2000	2000	LEPHs	µg/g	--	--	--	—	--
2000e	2000e	EPH ₉₋₁₅	µg/g	--	--	--	—	--
5000	5000	HEPHs	µg/g	--	--	--	—	--
5000e	5000e	EPH ₉₋₂₂	µg/g	--	--	--	—	--
Monocyclic Aromatic Hydrocarbons								
2.5a	2.5a	benzene	µg/g	<0.0050	<0.0050	<0.0050	—	0.17
20a	20a	ethylbenzene	µg/g	<0.010	0.019	0.017	0.002-0.005	0.36
50	50	styrene	µg/g	<0.030	<0.030	<0.030	—	<0.030
25a	25a	toluene	µg/g	<0.020	<0.020	<0.020	—	0.067
50	50	xylene	µg/g	<0.040	<0.040	<0.040	—	0.75
Non-Halogenated Aliphatics								
700	700	methyl tert-butyl ether	µg/g	--	--	--	—	--
Polycyclic Aromatic Hydrocarbons								
n/s	n/s	acenaphthene	µg/g	--	--	--	—	--
n/s	n/s	acenaphthylene	µg/g	--	--	--	—	--
n/s	n/s	anthracene	µg/g	--	--	--	—	--
10	10	benzo[a]anthracene	µg/g	--	--	--	—	--
10a	10a	benzo[a]pyrene	µg/g	--	--	--	—	--
10	10	benzo[b]fluoranthene	µg/g	--	--	--	0.009-0.05	--
10	10	benzo[b+g]fluoranthene	µg/g	--	--	--	—	--
n/s	n/s	benzo[g,h,i]perylene	µg/g	--	--	--	—	--
10	10	benzo[k]fluoranthene	µg/g	--	--	--	—	--
n/s	n/s	chrysene	µg/g	--	--	--	—	--
10	10	dibenz[a,h]anthracene	µg/g	--	--	--	—	--
n/s	n/s	fluoranthene	µg/g	--	--	--	—	--
n/s	n/s	fluorene	µg/g	--	--	--	—	--
10	10	indeno[1,2,3-cd]pyrene	µg/g	--	--	--	—	--
n/s	n/s	methylnaphthalene, 2-	µg/g	--	--	--	—	--
50	50	naphthalene	µg/g	--	--	--	—	--
50	50	phenanthrene	µg/g	--	--	--	—	--
100	100	pyrene	µg/g	--	--	--	—	--
n/s	n/s	Total HMW-PAHs	µg/g	--	--	--	—	--
n/s	n/s	Total LMW-PAHs	µg/g	--	--	--	—	--
n/s	n/s	Total PAHs	µg/g	--	--	--	—	--

Soil Exceedances
125
125

Exceeds CSR CL standards
Exceeds CSR IL standards

QA/QC Exceedances
0%
0%

RPD is within 25%
No exceedance RPD



TABLE 9: SOIL ANALYTICAL RESULTS

HYDROCARBONS

456 Prior Street
 456 Prior Street Holdings Ltd.
 Project #: 12349
 Jul-15

CSR CL Standards	CSR IL Standards
------------------	------------------

n/s	n/s
2000	2000
2000e	2000e
5000	5000
5000e	5000e

n/s	n/s
n/s	n/s
n/s	n/s
10	10
10a	10a
10	10
10	10
n/s	n/s
10	10
n/s	n/s
10	10
n/s	n/s
n/s	n/s
10	10
n/s	n/s
50	50
n/s	n/s
50	50
100	100
n/s	n/s
n/s	n/s
n/s	n/s

SAMPLE ID	Units	BF15-1
DATE SAMPLED		01-Jun-16
LAB CERTIFICATE		B546543
LAB SAMPLE ID		M0880
SAMPLE DEPTH (mbg)		-
SOIL DESCRIPTION		

Petroleum Hydrocarbons		
Waste Oil	µg/g	200
LEPHs	µg/g	<100
EPHs ₁₀₋₁₅	µg/g	<100
HEPHs	µg/g	<100
EPHs ₁₅₋₃₀	µg/g	<100

Polycyclic Aromatic Hydrocarbons		
acenaphthene	µg/g	<0.050
acenaphthylene	µg/g	<0.050
anthracene	µg/g	<0.050
benzo[a]anthracene	µg/g	<0.050
benzo[a]pyrene	µg/g	<0.050
benzo[b]fluoranthene	µg/g	<0.050
benzo[b]fluoranthene	µg/g	<0.050
benzo[g,h,i]perylene	µg/g	<0.050
benzo[k]fluoranthene	µg/g	<0.050
chrysene	µg/g	<0.050
dibenz[a,h]anthracene	µg/g	<0.050
fluoranthene	µg/g	<0.050
fluorene	µg/g	<0.050
indeno[1,2,3-cd]pyrene	µg/g	<0.050
methylnaphthalene, 2-	µg/g	<0.050
naphthalene	µg/g	<0.050
PAH TEQ	µg/g	0.065
phenanthrene	µg/g	<0.050
pyrene	µg/g	<0.050
Total HMW-PAHs	µg/g	<0.050
Total LMW-PAHs	µg/g	<0.050
Total PAHs	µg/g	<0.050

Soil Exceedances

125
125

Exceeds CSR CL standards

Exceeds CSR IL standards

QA/QC Exceedances

45%
5>3

RPD exceeds 35%

MS exceeds RDL

TABLE 10: SOIL ANALYTICAL RESULTS

INORGANICS

456 Prior Street
 456 Prior Street Holdings Ltd.
 Project #: 12349
 Jul-15

CSR CL Standards	CSR IL Standards
n/s	n/s

SAMPLE ID	Units	BF15-1
DATE SAMPLED		01-Jun-16
LAB CERTIFICATE		B546543
LAB SAMPLE ID		M0880
SAMPLE DEPTH (mbg)		--
SOIL DESCRIPTION		
pH	--	7.26

n/s	n/s
40	40
25a	25a
1500a	1500a
8	8
2-100ab	2-200ab
700c	700c
300	300
90-250ab	90-250ab
150-700ab	150-2000ab
19000	19000
40a	150a
40	40
500	500
10	10
40	40
100000	100000
300	300
n/s	n/s
n/s	n/s
150-600ab	150-600ab

Metals		
aluminum	µg/g	7660
antimony	µg/g	0.2
arsenic	µg/g	2.24
barium	µg/g	43.2
beryllium	µg/g	<0.40
cadmium	µg/g	0.219
chromium (total)	µg/g	27.4
cobalt	µg/g	6.88
copper	µg/g	14.6
lead	µg/g	2.32
manganese	µg/g	335
mercury	µg/g	<0.050
molybdenum	µg/g	0.34
nickel	µg/g	33.2
selenium	µg/g	<0.50
silver	µg/g	0.075
strontium	µg/g	22.3
tin	µg/g	0.18
titanium	µg/g	715
vanadium	µg/g	40.3
zinc	µg/g	37.4

Soil Exceedances

125
125

Exceeds CSR CL standards
 Exceeds CSR IL standards

QA/QC Exceedances

45%
5>3

RPD exceeds 35%
 MS exceeds RDL

**TABLE 11: GROUNDWATER ANALYTICAL RESULTS
HYDROCARBONS AND INORGANICS**
456 Prior Street
456 Prior Street Holdings Ltd.
Project #: 12349
July 2015

CSR AWM Standards	SAMPLE ID	Units	MW15-18 17-Jun-15	MW15-AA 17-Jun-15	RPD or MS for MW15-18 and MW15-AA	MW15-18 25-Jun-15	MW15-19 17-Jun-15	MW15-19 25-Jun-15
	DATE SAMPLED							
	LAB CERTIFICATE		B661116	B661116		B663988	B661116	B663988
	LAB SAMPLE ID		ML9876	ML9879		MN5272	ML9877	MN5273
	TOP OF SCREEN (mbg)		0.0	Duplicate of MW15-18		0.0	0.0	0.0
	BOTTOM OF SCREEN (mbg)		0.0			0.0	0.0	0.0
Petroleum Hydrocarbons								
1500	VPHw	µg/L	<300	<300	--	<300	<300	<300
15000	VHw ₁₀	µg/L	<300	<300	--	<300	<300	<300
500	LEPHw	µg/L	<200	<200	--	<200	<200	<200
5000	EPHw _{10,18}	µg/L	<200	<200	--	<200	<200	<200
n/s	HEPHw	µg/L	<200	<200	--	<200	<200	<200
n/s	EPHw _{15,32}	µg/L	<200	<200	--	<200	<200	<200
Monocyclic Aromatic Hydrocarbons								
1000	benzene	µg/L	<0.40	<0.40	--	<0.40	<0.40	<0.40
2500	ethylbenzene	µg/L	<0.40	<0.40	--	<0.40	<0.40	<0.40
720	styrene	µg/L	<0.40	<0.40	--	<0.40	<0.40	<0.40
3300	toluene	µg/L	<0.40	<0.40	--	<0.40	<0.40	<0.40
n/s	xylenes	µg/L	<0.40	<0.40	--	<0.40	<0.40	<0.40
Poly cyclic Aromatic Hydrocarbons								
10	naphthalene	µg/L	<0.10	<0.10	--	0.12	<0.10	<0.10
Inorganics								
n/s	hardness	mg/L	278	--	--	--	--	--
Dissolved Metals								
20	lead	µg/L	<0.20	--	--	--	--	--

Groundwater Exceedances

125 Exceeds CSR AWM standards

QA/QC Exceedances

45% RPD exceeds 20%
5>3 MS exceeds RDL

TABLE 12: VAPOUR ANALYTICAL RESULTS

CSAP FUELS LIST

456 Prior Street
 456 Prior Street Holdings Ltd.
 Project #: 12349
 July 2015

CSR CL Standards	CSR IL Standards
------------------	------------------

3000	11500
n/s	n/s

4	10
3000	9000
3000	9000
15000	45000
300	900

6	20
8000	25000
2000	6500
9000	27000
9000	27000

1000	4000
20	55
20	55

9	25
---	----

1	1
1	3.5

SAMPLE ID	SV15-18		
DATE SAMPLED	02-Jul-15		
LAB CERTIFICATE	B555896		
LAB SAMPLE ID	MO8254		
SAMPLE DEPTH (mbg)	1.2		
FLOW RATE (L/min)	0.1		
FLOW DURATION (min)	40		
VAPOUR CONCENTRATION	MSVC	PIVC (CL/IL)	POVC
ATTENUATION FACTOR	--	3.7E-04	1.5E-06

Petroleum Hydrocarbons				
VPHv	µg/m³	240000	88.8	0.36
VH ₆₋₁₃	µg/m³	260000	96.2	0.39

Monocyclic Aromatic Hydrocarbons				
benzene	µg/m³	55	0.02	0.000083
ethylbenzene	µg/m³	37	0.014	0.000056
styrene	µg/m³	6.6	0.0024	0.000099
toluene	µg/m³	76	0.028	0.00011
xylenes	µg/m³	48	0.018	0.000072

Non-Halogenated Aliphatics				
butadiene, 1,3-	µg/m³	<1.3	<0.00048	<0.000002
decane, n-	µg/m³	<2.5	<0.00093	<0.000038
hexane, n-	µg/m³	16000	5.92	0.024
methyl tert-butyl ether	µg/m³	<25	<0.0093	<0.000038
methylcyclohexane	µg/m³	26000	9.62	0.039

Non-Halogenated Aromatics				
isopropylbenzene	µg/m³	<0.5	<0.000185	<0.00000075
trimethylbenzene, 1,2,4-	µg/m³	5.2	0.0019	0.0000078
trimethylbenzene, 1,3,5-	µg/m³	5.3	0.002	0.000008

Polycyclic Aromatic Hydrocarbons				
naphthalene	µg/m³	<2.5	<0.00093	<0.000038

Halogenated Aliphatics				
dibromoethane, 1,2-	µg/m³	<0.5	<0.000185	<0.00000075
dichloroethane, 1,2-	µg/m³	<0.25	<0.0000925	<0.000000375

Vapour Exceedances

125	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances

45%	RPD exceeds 35%
5>3	MS exceeds RDL



APPENDIX A

PREVIOUS DOCUMENTS AND NIR





May 23, 2014

Mr. Victor Brent Louie
Le Kiu Holdings Ltd.
456 Prior Street
Vancouver, BC
V6A 2E5

Dear Mr. Louie:

**Re: Report of Findings – Phase I Environmental Site Assessment
370 and 456 Prior Street, Vancouver, BC
Project No. 12108 (1.0)**

We have enclosed the report titled *Report of Findings – Phase I Environmental Site Assessment, 370 and 456 Prior Street, Vancouver, BC*. We are pleased to submit this report to Le Kiu Holdings Ltd.

If you have any questions, please contact me.

Sincerely,

Keystone Environmental Ltd.

Nicole MacDonald, P.Ag.
Project Manager

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Encl.

**REPORT OF FINDINGS
PHASE I
ENVIRONMENTAL SITE ASSESSMENT**

**370 and 456 Prior Street
Vancouver, BC**

Prepared for:

**LE KIU HOLDINGS LTD.
370 and 456 Prior Street
Vancouver, BC
V6A 2E5**

Prepared by:

**KEYSTONE ENVIRONMENTAL LTD.
Suite 320 – 4400 Dominion Street
Burnaby, BC
V5G 4G3**

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www.keystoneenviro.com**

Project No. 12108

May 2014

EXECUTIVE SUMMARY

This KEYSTONE ENVIRONMENTAL™ Phase I Environmental Site Assessment (ESA) report, prepared at the request of Le Kiu Holdings Ltd. was conducted for the two properties referenced as 370 and 456 Prior Street, in the City of Vancouver, BC (the Site)¹. The total area of the Site is approximately 8,570 m². The Site is currently occupied by a multi-tenant warehouse and office building.

One property (410 Prior Street) is located between the two portions of the Site (370 and 456 Prior Street). The property at 410 Prior Street is owned by the City of Vancouver and is currently occupied by a paved parking area associated with the Site.

On-Site Summary

In 1910, a former shingle manufacturer was located on the Site. From the early 1920s, or earlier, to the mid-1940s, a former building was located on the west portion of the Site at 436 Prior Street. Historical records indicated that the former building was occupied by a contractor's warehouse (Grant Smith & Co.) and a former logging supply operation (F&F Equipment).

In the late 1940s, the former building was removed and the west and central portions of the existing warehouse were constructed. The east portion of the existing warehouse was added in the late 1950s/early 1960s. A former rail spur was located on the south perimeter of the Site, adjacent to the south of the existing warehouse, from the late 1940s to the mid-1970s. The rail spur was removed in the late 1970s, and the Site has remained relatively unchanged since the 1970s. Occupants of the existing warehouse included Slade & Stewart, a grocery distributor, from the 1950s to the mid-1980s. Since the mid-1980s, various grocery, importing, wholesale, and office operations have occupied the Site.

The following on-Site areas of potential environmental concern (APECs) were identified:

APEC 1 – Fill Material (south portion of the Site)

Fire insurance maps from 1930 indicate that the historical high water mark of False Creek (prior to infilling the False Creek flats) was located on the south portion of the Site; and a Vancouver Old Streams map indicates that a former stream was located on the south portion of the Site, as shown on Figure 1. Based on the unknown origin and quality of the material used to fill the south portion of the Site, there is considered to be a potential for constituents of concern associated with the fill material to be present in Site soil, groundwater, and/or vapour at concentrations greater than the Contaminated Sites Regulation (CSR) standards.

¹ 550 Malkin Street and 454 Prior Street are alternate addresses associated with the Site. According to historical records, 436 and 450 Prior Street were former addresses associated with the Site.

APEC 2 – Heating Oil and USTs

It is unknown how, or if, the former structure on the Site were heated. If they were heated, wood, coal, electricity, or heating oil may have been used. If heating oil was used, it would have been stored in above ground storage tanks (ASTs) and/or underground storage tanks (USTs). The former building located on the Site was located within the footprint of the existing Site building; therefore, if heating oil USTs were present; it is likely that they would have been removed during the redevelopment of the Site in the 1940s.

Currently, the Site building is connected to natural gas. It is unknown how the building was heated prior to natural gas connection. A former boiler was observed in the southwest portion of the building; however it is unknown how it was fuelled. During the Site reconnaissance, two cut-off metal pipes indicative potential vent pipes were observed top the northwest of the existing Site building. In addition, one circular metal cover (flush with the ground) was observed to the northwest of the Site building (in the vicinity of the cut-off pipes). The circular metal cover was located in a concrete pad approximately 5 m x 3 m in area, indicative of potential UST beneath the concrete patch. Therefore, there is a potential for a potential UST to be located on the northwest portion of the Site.

Off-Site Summary

The off-Site properties located to the north of the Site have been occupied by single family residences since the 1930s, or earlier. The properties located to the east and west of the Site have been primarily occupied by industrial operations and the since the 1930s, or earlier. The property located to the south of the Site was occupied by a rail yard from the 1930s to the late 1980s, and has remained primarily vacant since the early 1990s.

As shown in Table 3, eleven off-Site properties were identified as having been occupied by historical operations of potential environmental concern. Of the eleven, the three off-Site properties listed below were identified as Areas of Potential Concern (APECs) to the Site:

- APEC 3 – Off-Site former smelting and metal operations at 310 Prior Street from the 1930s to the 1960s (adjacent to the west of the Site)
- APEC 4 – Off-Site former ink manufacturing operation at 496 Prior Street from the 1930s to the 1960s (adjacent to the east of the Site)
- APEC 5 – Off-Site former rail yard at 1002 Station Street from the 1920s to the 1980s (adjacent to the south-southwest of the Site)

Conclusion

There is a potential for constituents of concern associated with historical on and off-Site activities to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the applicable standards provided in the British Columbia Contaminated Sites Regulation (CSR).

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Appendix D	General Terms and Conditions for Services

LIST OF ACRONYMS

APEC	AREA OF POTENTIAL ENVIRONMENTAL CONCERN
AST	ABOVEGROUND STORAGE TANK
AW	AQUATIC LIFE WATER USE (SITE SPECIFIC)
BGS	BELOW GROUND SURFACE
BH	BOREHOLE
BTEX	BENZENE, TOLUENE, ETHYLBENZENE AND XYLENE
CCME	CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT
CL	COMMERCIAL LAND USE (SITE SPECIFIC)
COC	CERTIFICATE OF COMPLIANCE
CSR	CONTAMINATED SITES REGULATION
DNAPL	DENSE NON-AQUEOUS PHASE LIQUIDS
DSI	DETAILED SITE INVESTIGATION
DW	DRINKING WATER USE (SITE SPECIFIC)
EH	EXTRACTABLE HYDROCARBONS
EM	ELECTROMAGNETIC
EMA	ENVIRONMENTAL MANAGEMENT ACT
EPH	EXTRACTABLE PETROLEUM HYDROCARBONS
ERA	ECOLOGICAL RISK ASSESSMENT
ESA	ENVIRONMENTAL SITE ASSESSMENT
GPR	GROUND PENETRATING RADAR
HEPH	HEAVY EXTRACTABLE PETROLEUM HYDROCARBONS IN SOILS
HEPH _w	HEAVY EXTRACTABLE PETROLEUM HYDROCARBONS IN GROUNDWATER
HHERA	HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT
HWR	HAZARDOUS WASTE REGULATION
IL	INDUSTRIAL LAND USE (SITE SPECIFIC)
IW	IRRIGATION WATER USE (SITE SPECIFIC)
LEPH	LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS IN SOILS
LEPH _w	LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS IN GROUNDWATER
LNAPL	LIGHT NON-AQUEOUS PHASE LIQUIDS
LW	LIVESTOCK WATER USE (SITE SPECIFIC)
MBG	METRES BELOW GRADE
MBGS	METRES BELOW GROUND SURFACE
MOE	MINISTRY OF ENVIRONMENT
MTBE	METHYL TERTIARY BUTYL ETHER
MW	MONITORING WELL

LIST OF ACRONYMS (CONT'D)

NAPL	NON-AQUEOUS PHASE LIQUID
NS	NO STANDARD
NWU	NO WATER USE (SITE SPECIFIC)
OWS	OIL/WATER SEPARATOR
PAH(s)	POLYCYCLIC AROMATIC HYDROCARBONS
PCB(s)	POLYCHLORINATED BIPHENYLS
PCOC(s)	POTENTIAL CONSTITUENT(S) OF CONCERN
PERC	PERCHLOROETHYLENE
PL	URBAN PARK LAND USE (SITE SPECIFIC)
PPM	PARTS PER MILLION
PSI 1	PRELIMINARY SITE INVESTIGATION – STAGE 1
PSI 2	PRELIMINARY SITE INVESTIGATION – STAGE 2
PST	PETROLEUM STORAGE TANK SITES
QA/QC	QUALITY ASSURANCE/QUALITY CONTROL
RL	RESIDENTIAL LAND USE (SITE SPECIFIC)
RPD	RELATIVE PERCENTAGE DIFFERENCE
SRR	SPILL REPORTING REGULATION
SSI	SUPPLEMENTAL SITE INVESTIGATION
TP	TEST PIT
UFFI	UREA FORMALDEHYDE FOAM INSULATION
UL	URBAN PARK LAND USE (SITE SPECIFIC)
USEPA	ENVIRONMENTAL PROTECTION AGENCY (U.S.)
UST	UNDERGROUND STORAGE TANK
VH _w	VOLATILE HYDROCARBONS IN GROUNDWATER
VOC(s)	VOLATILE ORGANIC COMPOUNDS
VPH	VOLATILE PETROLEUM HYDROCARBONS IN SOILS
VPH _w	VOLATILE PETROLEUM HYDROCARBONS IN GROUNDWATER
WQG	WATER QUALITY GUIDELINES

1. INTRODUCTION

This KEYSTONE ENVIRONMENTAL LTD™ Phase I Environmental Site Assessment (ESA) was prepared at the request of Le Kiu Holdings Ltd. for the two properties referenced as 370 and 456 Prior Street, in the City of Vancouver, BC (the Site)². The Site location is shown on Figure 1 and photographs of the Site are included in Appendix A.

This Phase I ESA was conducted to determine the potential for constituents of concern to be present in the soil, groundwater and/or vapour at the Site at concentrations greater than the applicable standards as outlined in the BC Contaminated Sites Regulation (CSR). It is understood that this report will be used in conjunction with the potential divestment of the Site.

1.1 Site Identification

The Site is identified as follows³:

370 Prior Street, Vancouver

Parcel Identifier: 010 292 187
Legal Description: Lot A, Blocks 2 To 7, 9 And 20 District Lots 181, 196 And 2037
Plan 7989

456 Prior Street, Vancouver

Parcel Identifier: 010 292 209
Legal Description: Lot B, Blocks 2 To 7, 9 and 20 District Lots 181, 196 and 2037
Plan 7989

² One off-Site property (410 Prior Street) is located between the two portions of the Site (370 and 456 Prior Street).

³ 550 Malkin Street and 454 Prior Street are alternate addresses associated with the Site. According to historical records, 436 and 450 Prior Street were former addresses associated with the Site.

The Site

Current Registered Owner: Le Kiu Holdings Ltd., Inc. No. 865077

Current Zoning: I3 (Industrial District)

Site Area: 8,120 m² (approximate)

Latitude: 49° 16' 34.6" North (approximate)

Longitude: 123° 5' 41.3" West (approximate)

The approximate latitude and longitude entered for the Site was determined from BC Water Resource Atlas (http://www.env.gov.bc.ca/wsd/data_searches/wrbc/index.html).

1.2 Scope of Work

The scope of work for this study was conducted in general accordance with the requirements of the Canadian Standards Association (CSA) Phase I Environmental Site Assessment (ESA) standards as outlined in the CSA publication Z768-01 and included the following tasks:

- A review of historical records including city street directories, aerial photographs, land use maps, fire insurance maps, the BC Ministry of Environment (MOE) on-line Site Registry, the BC Water Resources Atlas, and a current land title.
- A Site reconnaissance to observe Site conditions which may indicate the potential presence of contamination and to prepare a photographic record.
- A review of documents and reports relating to waste management and site contamination.
- A preliminary building survey for special attention substances such as asbestos, polychlorinated biphenyls (PCBs), and urea formaldehyde foam insulation (UFFI) which may be present in construction materials at the Site.

Previous environmental or geotechnical reports, if conducted, were not provided for review.

A current land title was obtained via the Land Title and Survey Authority website. Leases, title transfers or easements related to site contamination issues, and Section 219 Covenants were not listed in the land title. A copy of the land title is provided in Appendix B.

1.3 General Limitations

Findings presented in this report are based upon (i) a limited visual review of accessible areas of the Site building and surrounding grounds, (ii) interviews with personnel familiar with Site activities, and (iii) a review of Site, environmental agency and historical archive records. Sampling and analysis of wastes, water, soil, groundwater or air was not conducted as part of this review. Consequently, while findings and conclusions documented in this report have been prepared in a manner consistent with that level of care and skill normally exercised by other members of the environmental science and engineering profession practising under similar circumstances in the area at the time of the performance of the work, this report is not intended nor is it able to provide a totally comprehensive review of past or present Site environmental conditions. This report is intended to provide information to reduce, but not necessarily eliminate, uncertainty regarding the potential for contamination of a property. Where this potential has been identified, the further reduction of uncertainty requires the performance of a Phase II ESA.

This report has been prepared solely for the internal use of Le Kiu Holdings Ltd., pursuant to the agreement between Keystone Environmental Ltd. and Le Kiu Holdings Ltd. A copy of the general terms and conditions associated with this agreement is attached in Appendix D. By using the report, Le Kiu Holdings Ltd. agrees that they will review and use the report in its entirety. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibility of such parties. Keystone Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report.

2. PROPERTY DESCRIPTION

The Site consists of rectangular lot (370 Prior Street) and one irregularly shaped lot (456 Prior Street) located on the south side of Prior Street, between Malkin Avenue/Jackson Avenue and Dunlevy Avenue, in the City of Vancouver, BC. The total area of the Site is approximately 8,570 m². The Site is currently occupied by a multi-tenant warehouse and office building.

One off-Site property (410 Prior Street) is located between the two portions of the Site (370 and 456 Prior Street). The property at 410 Prior Street is currently owned by the City of Vancouver occupied by a paved parking area associated with the Site.

The Site is bordered to the north (across Prior Street) by single family residences, to the east (along Prior Street) by a commercial building and single family residences (across Malkin Avenue); to the south by a vacant lot and a Trillium Park, and to the west (along Prior Street), by a vacant industrial building and vacant lots. The Site and properties located in the vicinity of the Site are shown on Figure 1. Selected photographs of the Site are included in Appendix A.

2.1 Surficial Geology

The local surficial geology of the area was determined by consulting the Geological Survey of Canada Map 1486A (1979). According to the map, the stratigraphy of the Site varies between the north and south portions of the Site, as follows.

The stratigraphy on the north portion of the Site consists of Vashon Drift and Capilano Sediment deposits of the Post Glacial age. This unit consists of glacial drift including lodgement and minor flow till, lenses and interbeds of substratified glaciofluvial sand to gravel, and lenses and interbeds of glaciolacustrine laminated stony silt; up to 25 m thick; in most places correlates with Vashon Drift; overlain by glaciomarine and marine deposits similar to Capilano Sediments, normally less than 3 m but in places up to 10 m thick. Marine derived lag gravel normally less than 1 m thick containing marine shell casts has been found mantling till and glaciomarine deposits up to 175 m above sea level; above 175 m till is mantled by bouldery gravel that may be in part ablation till, in part colluvium, and in part marine shore in origin. Bedrock is located more than 10 m below surface.

The stratigraphy on the south portion of the Site consists of landfill including sand, gravel, till, crushed stone, and refuse. This is consistent with the south portion of the Site being formerly occupied by False Creek. A City of Vancouver Fire Insurance Map from 1930, indicates that the historical high-water mark of False Creek (prior to infilling the False Creek flats), was located on the south portion of the Site. Based on Keystone Environmental's experience in the area, approximately 1.5 m to 2.5 m of fill was observed overlying marine deposits (comprised of sandy silt to silty sand) to the south of (below) the original high-water mark, and approximately 1.4 m of fill was found overlying till (comprised of dense silt) to the north of (above) the original high-water mark.

2.2 Hydrogeology

Groundwater is expected to follow topography, flowing from areas of higher elevation to areas of lower elevation. Local groundwater flow direction may vary as a result of local conditions such as topography, geology and the presence of drainage channels and buried utilities, and is subject to confirmation with field measurements. At the Site, the local topography slopes down towards the south-southwest (approximate grade of 3%). False Creek is located approximately 575 m west-southwest of the Site. Based on the Keystone Environmental's experience in the area, the primary groundwater flow direction in the area is to the west, towards False Creek. Therefore, based on the local topography and previous investigations conducted in the area, the groundwater flow direction at the Site is inferred to be towards the west-southwest. It is anticipated that groundwater flows to the Site from adjacent properties and up-gradient properties to the east and northeast of the Site.

A Vancouver Old Streams map (UBC, 2011) indicates that a former stream was located on the southeast portion of the Site, as shown on Figure 1.

Based on Keystone Environmental's experience in the area, the depth to groundwater in the vicinity of the Site is approximately 0.4 meters below grade (mbg) to 1.6 mbg.

3. RECORDS REVIEW

Various documents were reviewed for information concerning past uses of, and activities at the Site and properties located in the vicinity of the Site. Based on the anticipated groundwater flow direction in the area (Section 2.2), the vicinity of the Site is defined as approximately 120 m east/northeast (up-gradient), 100 m north/northwest and south/southeast (cross-gradient), and approximately 80 m west/southwest (down-gradient) of the Site. The documents reviewed for information concerning historical land use include street directories, aerial photographs, land use maps, fire insurance maps, the MOE Site Registry, and the BC Water Resources Atlas.

3.1 Street Directories

Selected Vancouver City Street Directories, dated 1890, 1895, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1991, 1993/94, 1995/96, 1998, and 2001, were reviewed to obtain information regarding the occupancy of the Site and surrounding area. Street directories were not compiled for the vicinity of the Site prior to 1890, or after 2001. On-Site operations listed within the selected street directories are summarized in Table 1. Off-Site operations of potential environmental concern are listed in Table 2.

3.2 Aerial Photographs

Aerial photographs, dated 1930, 1949, 1954, 1963, 1970, 1976, 1981, 1986, 1994, 1999, 2004, 2009, and 2011⁴, were reviewed for information concerning historical physical features and land use on the Site and properties in the vicinity of the Site. A summary of the on-Site observations made during the aerial photograph review is listed in Table 1.

The properties located to the north of the Site have been occupied by single family residences since the 1930s, or earlier. The properties located to the east and west of the Site have been primarily occupied by industrial operations and the since the 1930s, or earlier. The property located to the south of the Site was occupied by a rail yard from the 1930s to the late 1980s, and has remained vacant since the early 1990s. A summary of off-Site observations from the aerial photographs are listed in Table 2.

⁴ The 2011 aerial photograph was obtained from the City of Vancouver online mapping service (VanMap).

3.3 Land Use Maps

City of Vancouver land use maps, dated 1971, 1980, and 1983, were reviewed. A summary of the on-Site observations made during the land use map review is listed in Table 1. Off-Site operations of potential environmental concern identified in the land use maps are listed in Table 2.

3.4 Fire Insurance Maps

City of Vancouver fire insurance maps, dated 1913, 1930, 1946, and 1956, were reviewed. A summary of the on-Site observations made during the fire insurance map review is listed in Table 1. Off-Site operations of potential environmental concern identified in the fire insurance maps are listed in Table 2.

3.5 Ministry of Environment Site Registry Search

An on-line search of the Ministry of Environment (MOE) Site Registry was conducted to determine if it contained information regarding soil, groundwater and/or vapour contamination for properties within a 500 m radius of the Site. The search was centred on 49° 16' 34.6" North by 123° 5' 41.3" West, the approximate latitude and longitude entered for the area of the Site. A copy of the search results is provided in Appendix C.

At the time of the on-line search (May 9, 2014), the Site Registry had been updated to May 4, 2014. The Site is not listed. Forty six (46) off-Site properties are listed in the Site Registry; four of which are located within the vicinity of the Site, as follows:

- Site ID: 1100 - 1002 Station Street, located adjacent to the south of the Site;
- Site ID: 6477 – 310 Prior Street, located adjacent to the west of the Site;
- Site ID: 6478 – 250 Prior Street, located approximately 70 m west of the Site; and
- Site ID: 12143 – 580 Malkin Street, located approximately 20 m southeast of the Site.

Detail Reports were obtained for the three above-listed properties, and pertinent information from the Detail Reports is summarized as follows:

ID: 1100 – 1002 Station Street (adjacent to the south of the Site)

- The property was registered in October 1997 and was updated in April 2014.
- The property status is “Active – Under Remediation”.
- The location description including the Burlington Northern Railroad within the east False Creek Industrial Lands.
- The property at 1100 Station Street was classified as non-high risk in March 2013.
- A Notice of Independent Remediation (NOIR) completion was submitted in November 2011.
- Approval in Principles (AiP) were issued in February 1999 (with nine conditions) and in July 1999. Multiple monitoring reports were submitted from to 1999 to 2011 in conjunction with the 1999 AiP.
- A Remediation Plan and Risk Assessment were submitted to the MOE in September 1993.
- The suspected land uses for this property included “Chemical Industries and Activities⁵”, “Landfill – Industrial Waste³”, “Metal Salvage Operations³”, “Metal Smelting/ Processing/ Finishing Industries/ Activities³”, “Petro. Prod./ Produce Water Strg Abvegrnd/ Undergrnd Tanks”, and, “Rail Car/Locomotive Maintenance/ Clean/ Salvage Incl. Railyards.”

Site ID: 6477 – 310 Prior Street (adjacent to the west of the Site)

- The property was registered in March 2000 and updated in March 2013.
- The property status is “Active – Under Remediation.”
- Activities were not reported for this property.

Site ID: 6478 – 250 Prior Street (approximately 70 m west of the Site)

- The property was registered in March 2000 and was updated in March 2103.
- The property status is “Active – Under Remediation.”
- An Approval in Principle was issued for the property in June 2000 with requirements of soil and groundwater monitoring. Monitoring reports were submitted from 2009 to 2011.

⁵ Noted that possible contamination source is from an adjacent property.

Site ID: 12143 – 580 Malkin Street (approximately 20 m southeast of the Site)

- The property was registered in March 2010 and was updated in January 2011.
- The property status is “Active – Remediation Complete.”
- A Certificate of Compliance (CofC) was issued using Risk-based standards in December 2010. In the CofC, restrictions were placed pertaining to land and water use, building construction, soil cover and vegetation, performance verification, and record keeping.
- In November 2010, the property was classified as non-high risk.
- The suspected land uses for this property included “Petro. Prod./ Produce Water Strg Abvegrnd/ Undergrnd Tanks”, and, “Rail Car/ Locomotive Maintenance/ Clean/ Salvage Incl. Railyards.”

The remaining forty-two (42) off-Site properties are located greater than 100 m west (cross-gradient), 200 m northwest (cross-gradient), and 180 m northeast (up-gradient) of the Site. Based on the distances from the Site, there is considered to be a low potential for the remaining forty-two listed properties to be considered areas of potential environmental concern (APECs) to the Site.

3.6 Water Well Search

The BC Water Resource Atlas, which displays groundwater management information for the Province of BC, was accessed on May 9, 2014. A search was conducted to determine if groundwater wells were located within 500 m of the Site. Groundwater water wells were not identified within the vicinity of the Site.

4. SITE RECONNAISSANCE

Keystone Environmental personnel visited the Site on May 13, 2014, accompanied by Mr. Michael Dignan, Property Manager for the Site. The purpose of the visit was to observe operations and conditions at the Site as well as neighboring properties to determine the potential for contamination at the Site and to prepare photographic documentation. Representative photographs taken during the Site reconnaissance are included in Appendix A.

The building is currently occupied by various food import and distribution operations, such as Le Kiu Importing Co. (a food import and distribution operation), Le Kiu Poultry (a poultry processing operation), Asian Family Foods (a packaging and distribution operation), and Vancouver Ballroom (a second storey dance studio). The building is constructed at grade; basements, crawlspaces, and/or underground parking areas are not present on the Site.

The warehouse, storage areas, and offices were viewed. Stored materials (primarily retail stock and shelving units) limited observations of the underlying areas inside the Site building. The chicken processing operation located in the central portion of the building was not viewed.

The grounds of the Site were viewed. Parked vehicles limited observations of the underlying areas on the Site grounds.

4.1 Grounds Survey

The following was observed by Keystone Environmental personnel, or was reported by Mr. Dignan, during the Site reconnaissance:

- The existing warehouse building occupied approximately 60% of the Site. The remaining 40% was occupied by paved parking and/or loading areas.
- On the northeast portion of the Site, a former propane fuel shed was observed. It was reported by Mr. Dignan, that the propane fuel station was decommissioned in circa 2011. Currently the shed is used for storage.
- A natural gas connection was observed on the west side of the Site building.
- Two unknown cut-off metal pipes and one circular metal cover (flush with the ground) were observed to the northwest of the Site building. The circular metal cover was located in a concrete pad approximately 5 m x 3 m in area, indicative of potential UST beneath the concrete patch.

- Various rectangular metal covers were observed in the paved areas to the north of the Site building. Mr. Dignan, lifted the cover on the northwest portion of the Site, and it was observed to contain water. It is anticipated that these are potentially catch basins and/or oil/water separators to address run-off in the paved parking areas.
- Groundwater monitoring wells were not observed on the grounds of the Site.
- In association with the on-Site operations, constituents of concern were not observed to be stored on the Site grounds.
- Pole mounted transformers were observed on the north portion of 370 Prior Street. Staining was not observed on the poles, or on the ground surface in the vicinity of the poles.
- Two 205 L steel drums were located on the northeast portion of the Site. The contents of the drums were unknown by Mr. Dignan. The drums were sealed and staining and/or overspill was not observed on the drums or on the unpaved ground surface in the vicinity of the drums.

4.2 Building Survey

The following was observed by Keystone Environmental personnel, or was reported by Mr. Dignan, during the Site reconnaissance.

- The Site building had concrete foundation and concrete brick exterior. Below grade structures (such as basements, crawlspaces and/or underground parking) are not located beneath the Site building.
- The south portion of the building has a second storey that was occupied by various offices, storage areas, and a dance studio. The main floor of the building was occupied by various walk-in refrigeration (cooler) units, warehouse areas, offices, and a poultry processing operation.
- Floor drains were observed throughout the warehouse. It was reported by Mr. Dignan that the drains are connected to the City of Vancouver municipal sewer system.
- A rectangular metal plate was observed in the concrete in the west portion of the warehouse. It is anticipated that the metal plate may be associated with a former scale.
- Fluorescent lighting was observed to be used throughout the building.

- The warehouse was observed to be heated by natural gas fired roof-mounted units.
- A battery charging station for the on-Site forklifts was located in the north portion of the warehouse.
- A maintenance room / work shop was located within a former walk-in cooler located in the southwest portion of the Site building. The area is used by the building management to conduct small-scale repairs and handy-man type activities (constructing shelves, fixing support legs, etc.). Floor drains were observed in the concrete floor of the walk-in cooler. Hydrocarbon-like staining was not observed on the concrete floors.
- It was reported by Mr. Dignan that workshop was formerly occupied by a wood working operation (from circa the mid-1990s to the early 2010s). Former woodworking activities primarily included sawing and nailing wood. Painting and/or wood treating was not conducted on the Site. Paint over-spray was not observed on the concrete surface in the workshop.
- A refrigeration mechanical room and a former boiler room were located in the southwest portion of the warehouse. Mr. Dignan was unaware of the historical use of the boiler. Currently, the room is primarily used for storage, and various small quantities of degreasers and detergents (less than 10 L capacity each) were observed in the boiler room. Multiple floor drains and/or sumps were observed in the vicinity of the boiler. Hydrocarbon-like staining and/or cut off pipes, indicative of potential heating oil USTs, were not observed in the vicinity of the boiler.
- Two drums and an oil drip tray were observed on the north-central portion of the Site building. It was reported by Mr. Dignan that some tenants may conduct minor repairs and/or maintenance of their trucks on the Site. Constituents of concern indicative of automotive repairs were not observed on the remaining areas of the Site.
- It was reported by Mr. Dignan that two elevators are located within the Site building. One is located in the warehouse portion of the building and one is located in the southwest corner of the building (associated with office on the second floor). The elevators were installed in the 1980s as requirement for work-place regulations. The elevators were not used, and therefore, were eventually boarded up. Since the elevators are not used, maintenance records of the elevators were not available for review. Mr. Dignan was unaware of what type of elevators they were (hydraulic-piston or cable).

- A parking garage with one bay door was located on the northeast portion of the Site building. It was reported by Mr. Dignan that the garage used to be used to park trucks overnight. Maintenance and/or repairs were not conducted in the garage. Stored materials limited observations of the interior of the garage during the Site reconnaissance.

4.3 Special Attention Substances

Based on the age of the Site building (constructed in the late 1940s), the potential for special attention substances such as asbestos, polychlorinated biphenyls (PCBs) and/or Urea Formaldehyde Foam Insulation (UFFI) to be present are as follows:

- There is a potential for asbestos (phased out in North America by the mid-1980s) to be present in building materials, such as wallboard/gypoc, ceiling tiles, built up roof systems, piping insulation, cement products, grouts, plaster, compressed papers and boards, duct tape, floor tiles, sealants, and protective coatings.
- There is a potential for current-regulating ballasts, transformers, and capacitors manufactured prior to 1980, that may potentially contain PCB, to be present on the Site.
- There is considered to be a low potential for UFFI to be present on the Site based on the lack of observed injection holes.

The presence or absence of such special attention substances have not been confirmed in the Site structures and where the potential has been identified, the further reduction of uncertainty requires the performance of a Hazardous Materials building survey. Where building materials may or do contain asbestos containing materials, WorkSafe BC stipulates requirements for their management during maintenance, renovation or demolition.

4.4 Adjacent Properties

The following was observed on the surrounding properties during the Site reconnaissance:

- The properties located to the north of the Site (across Prior Street) were occupied by single family residences.
- The properties located to the west of the Site were primarily vacant with the exception of one vacant warehouse building, located adjacent to the Site at 310 Prior Street.

- The property located to the southwest of the Site was primary vacant. Parked vehicles, associated with a car dealership, were observed approximately 100 m southwest of the Site.
- The property located to the southeast of the Site was occupied by Trillium Park (580 Malkin Street). The portion located within the vicinity of the Site was fenced and under development.
- The property located adjacent to the northeast of the Site (496 Prior Street) was occupied by White Monkey Design, a sculpting and special effects operation for the film industry. The property located east of the Site (Malkin Avenue) were occupied by single family residences.
- Drinking water wells were not observed in the vicinity of the Site.

5. INTERVIEWS

An interview was conducted on May 13, 2014 with Mr. Michael Dignan, Property Manager for the Site. Mr. Dignan has been the Property Manager for approximately three years. He reported the following:

- The propane fuel station, formerly located on the northeast portion of the Site, was decommissioned in circa 2011. Currently the shed is used for storage.
- Floor drains in the warehouse are connected to the City of Vancouver municipal sewer system.
- A maintenance room / work shop was located within a former walk-in cooler located in the southwest portion of the Site building. The area is used by the building management to conduct small-scale repairs and handy-man type activities (constructing shelves, fixing support legs, etc.). Floor drains were observed in the concrete floor of the walk-in cooler. Hydrocarbon-like staining was not observed on the concrete floors.
- It was reported by Mr. Dignan that workshop was formerly occupied by a wood working operation (from circa the mid-1990s to the early 2010s). Former woodworking activities primarily included sawing and nailing wood. Painting and/or wood treating was not conducted on the Site.
- Mr. Dignan was unaware of the historical use of the boiler located in the boiler room in the southwest portion of the warehouse.
- Two drums and an oil drip tray were observed on the north-central portion of the Site building. It was reported by Mr. Dignan that some tenants may conduct minor repairs and/or maintenance of their trucks on the Site.
- The two on-Site elevators were installed in the 1980s as requirement for work-place regulations. The elevators were not used, and therefore, were eventually boarded up. Mr. Dignan was unaware of what type of elevators they were (hydraulic-piston or cable).
- It was reported by Mr. Dignan that the parking garage located on the northeast portion of the Site was used to be used to park trucks overnight. Maintenance and/or repairs were not conducted in the garage.
- Back-up generators are not located on the Site.
- The contents of the two 205 L steel drums located on the northeast portion of the Site was not known by Mr. Dignan.

6. SUMMARY, DISCUSSION AND CONCLUSIONS

This Phase I ESA report was prepared at the request of Le Kiu Holdings Ltd., for the two properties referenced as 370 and 456 Prior Street, in the City of Vancouver, BC (the Site)⁶. The total area of the Site is approximately 8,570 m². The Site is currently occupied by a multi-tenant warehouse and office building.

One property (410 Prior Street) is located between the two portions of the Site (370 and 456 Prior Street). The property at 410 Prior Street is owned by the City of Vancouver and is currently occupied by a paved parking area associated with the Site.

6.1 On-Site Summary

Site History

In 1910, a former shingle manufacturer was located on the Site. From the early 1920s, or earlier, to the mid-1940s, a former building was located on the west portion of the Site at 436 Prior Street. Historical records indicated that the former building was occupied by a contractor's warehouse (Grant Smith & Co.) and a former logging supply operation (F&F Equipment).

In the late 1940s, the former building was removed and the west and central portions of the existing warehouse were constructed. The east portion of the existing warehouse was added in the late 1950s/early 1960s. A former rail spur was located on the south perimeter of the Site, adjacent to the south of the existing warehouse, from the late 1940s to the mid-1970s. The rail spur was removed in the late 1970s, and the Site has remained relatively unchanged since the 1970s. Occupants of the existing warehouse included Slade & Stewart, a grocery distributor, from the 1950s to the mid-1980s. Since the mid-1980s, various grocery, importing, wholesale, and office operations have occupied the Site.

⁶ 550 Malkin Street and 454 Prior Street are alternate addresses associated with the Site. According to historical records, 436 and 450 Prior Street were former addresses associated with the Site.

APEC 1 – Fill Material (south portion of the Site)

Fire insurance maps from 1930 indicate that the historical high water mark of False Creek (prior to infilling the False Creek flats) was located on the south portion of the Site; and a Vancouver Old Streams map indicates that a former stream was located on the south portion of the Site, as shown on Figure 1. Based on the unknown origin and quality of the material used to fill the south portion of the Site, there is considered to be a potential for constituents of concern associated with the fill material to be present in Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

APEC 2 – Heating Oil and USTs

It is unknown how, or if, the former structure on the Site were heated. If they were heated, wood, coal, electricity, or heating oil may have been used. If heating oil was used, it would have been stored in above ground storage tanks (ASTs) and/or underground storage tanks (USTs). The former building located on the Site was located within the footprint of the existing Site building; therefore, if heating oil USTs were present; it is likely that they would have been removed during the redevelopment of the Site in the 1940s.

Currently, the Site building is connected to natural gas. It is unknown how the building was heated prior to natural gas connection. A former boiler was observed in the southwest portion of the building; however it is unknown how it was fuelled. During the Site reconnaissance, two cut-off metal pipes indicative potential vent pipes were observed top the northwest of the existing Site building. In addition, one circular metal cover (flush with the ground) was observed to the northwest of the Site building (in the vicinity of the cut-off pipes). The circular metal cover was located in a concrete pad approximately 5 m x 3 m in area, indicative of potential UST beneath the concrete patch. Therefore, there is a potential for a potential UST to be located on the northwest portion of the Site.

Remaining On-Site Activities

Aerial photographs indicate that a former rail spur was located on the south perimeter of the Site from the 1940s to the 1970s. The former rail spur ran adjacent to the loading platform on the south perimeter of the Site (currently the platform is enclosed and used for storage). Based on

observations from aerial photographs and fire insurance maps, it is anticipated that the rail spur was used for loading activities, and that repairs or maintenance was not conducted on the Site. Therefore, there is considered to be a low potential for constituents of concern associated with the rail spur to be present in Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

A former shingle manufacturer was located on the Site in 1910. Based on the duration of time since the operations has ceased and the redevelopment of the Site, there is considered to be a low potential for constituents of concern associated with the rail spur to be present in Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

The Site has been used for commercial purposes since the early 1920s. Operations of potential environmental concern were not identified to have been conducted on the Site since the 1920s.

6.2 Off-Site Summary

The off-Site properties located to the north of the Site have been occupied by single family residences since the 1930s, or earlier. The properties located to the east and west of the Site have been primarily occupied by industrial operations and the since the 1930s, or earlier. The property located to the south of the Site was occupied by a rail yard from the 1930s to the late 1980s, and has remained primarily vacant since the early 1990s.

As shown in Table 3, eleven off-Site properties were identified as having been occupied by historical operations of potential environmental concern. Of the eleven, the following three were identified as Areas of Potential Concern (APECs) to the Site:

APEC 3 – 310 Prior Street (adjacent to the west of the Site)

Various metals and smelting operations were located at 310 Prior Street, adjacent to the west of the Site, from the 1930s to the 1960s. The property is listed in the MOE Site Registry as "Active – Under Remediation"; however, further activities were not reported for the property. Based on the adjacent proximity to the Site and the duration of the former smelting operations, there is considered to be a moderate potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

APEC 4 – 496 Prior Street (adjacent to the east of the Site)

A former ink manufacturer was located at 496 Prior Street, adjacent to the east of the Site, from the 1930s to the 1960s. Aerial photographs show that the existing building has been located on the property since the 1930s. Given that the property has not been redeveloped and that it is located adjacent and up-gradient to the Site, there is considered to be a moderate potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

APEC 5 – Former Rail yard at 1002 Station Street (adjacent to the south-southwest of the Site)

A former rail yard, with various buildings containing repair and machine shops, was located at 1002 Station Street, adjacent to the south of the Site from the 1930s, or earlier, to the 1980s. The property has been primarily vacant since the late 1980s. The property is listed in the MOE Site Registry as "Active - Under Remediation." The property was classified as non-high risk and a NOIR completion was submitted in November 2011. Aerial photographs show former building located approximately 10 m south of the Site, from the early 1970s to the late 1980s. Based on the proximity to the Site, the unknown details of the investigations conducted on the property, and the fact that property has not been redeveloped, there is considered to be a potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

Remaining Off-Site Properties

The remaining eight off-Site properties are considered to have a low potential to be APECs to the Site, primarily based on the down to cross-gradient distance from the Site, the length of time since the historical operations have ceased, and/or the issuance of a CofC. Details of the off-Site APECs are provided in Table 3.

6.3 Summary of APECs

The following areas of potential environmental concern (APECs) were identified for the Site and are shown on Figure 2:

- APEC 1 - On-Site fill material on the south portion of the Site
- APEC 2 – On-Site potential heating oil and/or other USTs
- APEC 3 – Off-Site former smelting and metal operations at 310 Prior Street from the 1930s to the 1960s (adjacent to the west of the Site)
- APEC 4 – Off-Site former ink manufacturing operation at 496 Prior Street from the 1930s to the 1960s (adjacent to the east of the Site)
- APEC 5 – Off-Site former rail yard at 1002 Station Street from the 1920s to the 1980s (adjacent to the south-southwest of the Site)

6.4 Conclusion

There is a potential for constituents of concern associated with historical on and off-Site activities to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the applicable standards provided in the British Columbia Contaminated Sites Regulation.

7. PROFESSIONAL STATEMENT

Keystone Environmental Ltd.⁷ confirms that this report titled *Report of Findings – Phase I Environmental Site Assessment, 456 Prior Street, Vancouver, BC* has been prepared in general accordance with CSA Standard Z768-01.

This report was prepared by Jodine Restiaux, reviewed by Nicole MacDonald and Michael Garegthy, and is subject to the General Terms and Conditions appended at the end of the report.

May 23, 2014

Date

Jodine Restiaux, B.Sc., A.Ag.
Environmental Scientist

Nicole MacDonald, B.Sc., P.Ag.
Project Manager

Michael Geragthy, M.Sc., P.Geo.
Senior Project Manager

⁷ Keystone Environmental Ltd.'s corporate address is:
Suite 320 - 4400 Dominion Street, Burnaby, BC V5G 4G3
Telephone: 604-430-0671 / Facsimile: 604-430-0672 / Internet: www.keystoneenviro.com

8. REFERENCES

Aerial photographs dated:

- 1930: A2234: 74
- 1949: BC728:20, 21
- 1954: BC1673:3
- 1963: BC5061:110
- 1970: 21409: 136, 137
- 1976: BC5720: 194, 195
- 1981: A25666: 21, 22
- 1987: BC86039: 147, 148
- 1994: FFC94: 224, 225
- 1999: SRS6068: 29, 30
- 2004: SRS6929: 97, 98
- 2009: SRS7987: 363
- 2011: obtained from the City of Vancouver online mapping service (VanMap)

BC Ministry of Environment (MOE) Site Registry via BC Online: <https://www.bconline.gov.bc.ca/>

City of Vancouver land use maps dated 1971, 1980, and 1983.

City of Vancouver online mapping service (VanMap):

<http://map.city.Vancouver.bc.ca/website/gis/viewer.htm>

Current Land Title obtained via LTSA website: <https://help.ltsa.ca/>

Geological Survey of Canada Map 1486A, dated 1979

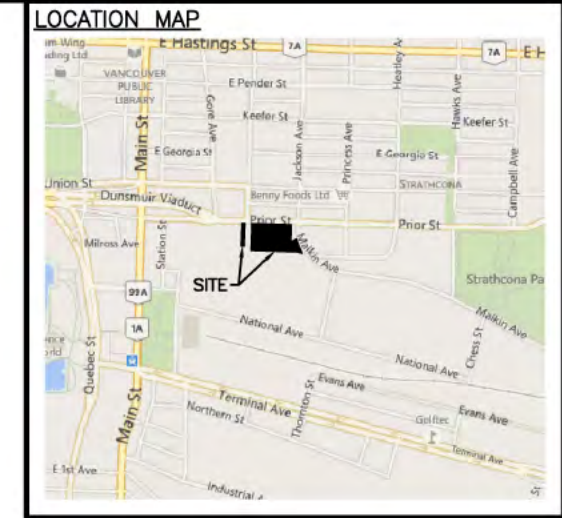
Google Earth: <http://www.google.com/earth/index.html>

Greater Vancouver Street Directories, dated 1890, 1895, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1991, 1993/94, 1995/96, 1998, and 2001

University of British Columbia (UBC) Vancouver Old Streams map, dated 2011

Water well search via the BC Water Resources Atlas: <http://srmapps.gov.bc.ca/apps/wrbc/>

FIGURES

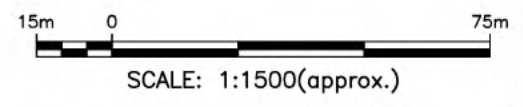


INFERRED LOCAL
GROUNDWATER
FLOW DIRECTION

- LEGEND**
- SITE
 - BUILDING OUTLINE
 - - - - FORMER BUILDING/STRUCTURES
 - ##### FORMER RAIL SPUR
 - FORMER CREEKS
 - - - - FORMER HIGH WATER MARK
 - () FORMER ADDRESS
 - 250** LISTED ON BC MOE SITE REGISTRY

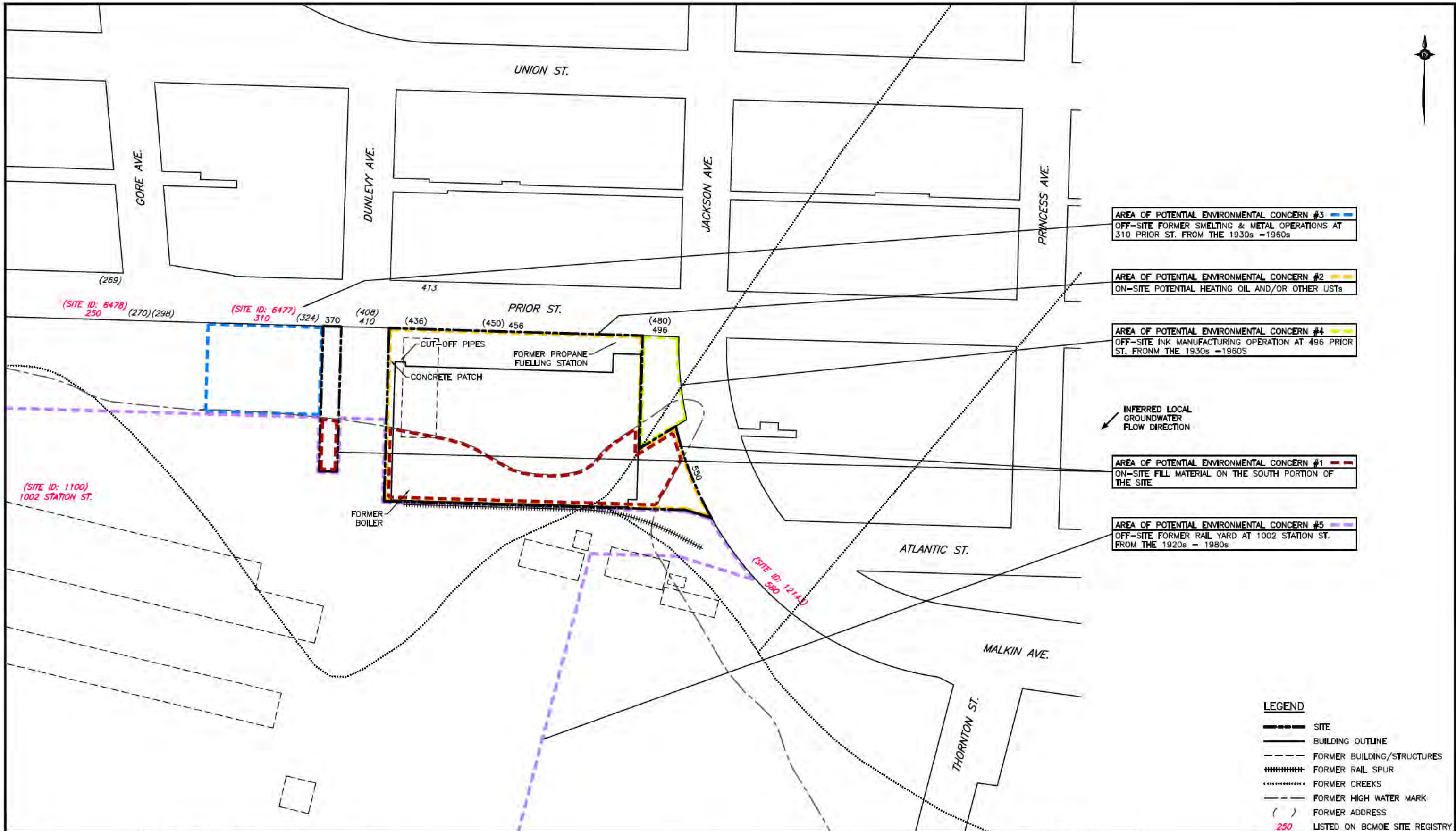


NOTE: THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.

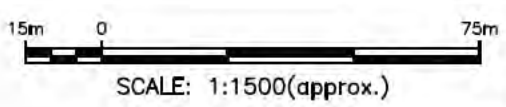


370 & 456 Prior Street Vancouver, B C Le Kiu Holdings Ltd.		
REVISION No. 00	DATE May 2014	PROJECT No. 12108-01

Figure 1
Location, Site & Surrounding
Land Use Plan



NOTE: THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.



370 & 456 Prior Street Vancouver, B C Le Kiu Holdings Ltd.		
REVISION No. 00	DATE May 2014	PROJECT No. 12108-01

Figure 2
Areas of Potential
Environmental Concern



TABLES

Table 1 - On-Site Historical Review Summary (1 of 1)

370 and 456 Prior Street, Vancouver, BC
 Le Kiu Holdings Ltd.
 Project No. 12108-01

Address	Street Directories	Aerial Photographs (AP)	Land Use Maps (LUM)	Fire Insurance Maps (FIM)
	Years Reviewed: 1890, 1895, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1991, 1993/94, 1995/96, 1998, and/or 2001	Years Reviewed: 1930, 1949, 1954, 1963, 1970, 1976, 1981, 1986, 1994, 1999, 2004, 2009, and 2011	Years Reviewed: 1971, 1980, and 1983	Year Reviewed: 1913, 1930, 1946, and 1956
Prior Street - On-Site				
(436)	1925 to 1935 - Grant Smith & Co. & McDonnell Ltd. 1940 to 1945 - F&F Equipment Co. - logging supplies	1930 - former building on W portion of the Site	1971 - commercial 1980 and 1983 - wholesale & warehouse	1913 - vacant
454	1950 to 1985 - Slade & Stewart - groceries 1991 - Georgia Park Construction Co. 1993/94 - Prior Properties 1995/96 - Slocal Food Importing 1998 to 2001 - Nam Thai International	1949 to 1954 - W and C portions of the existing building located on the Site; remaining areas paved for parking/loading. Former rail spur located on the S perimeter of the Site. 1963 to 1976 - The existing E portion of the Site building was added; remaining areas paved for parking/loading; former rail spur remained on S perimeter of the Site.		1930 - "Grant Smith & Co. & McDonnell Ltd." (contractors warehouse) was located in a former building on the W portion of the Site 1956 - "Slade & Stewart" (wholesale produce) was located in the existing building. S portion of the building had offices on second level; two stories of cold storage; and a concrete encased boiler (located on the SW portion of the property); N portion was used for produce wholesale. Rail Spur located on the S perimeter of the Site.
(450)	1910 - Smith & Clark - shingle manufactures			
456	1991 - Prior Properties 1993/94 to 1995/96 - Yamauchi Joe E K Architect 1993/94 to 1995/96 - Vancouver Ballroom Dance Club 1993/94 to 1995/96 - Straker & Straker - flower wholesale 1995/96 - Slocal Food Importing 1993/94 to 1995/96 - Nam Thai International 1998 - #A Central Valley Food Inc. 2001 - Pacific Enterprises	1981 to 2011 - Former rail spur removed from the S perimeter of the Site; remaining areas relatively unchanged.		
Malkin Avenue - On-Site				
550	1993/94 - Pacific Edge Trade Group Canada Ltd. 1993/94 - Pine Trading International Inc. - import & export 1993/94 to 2001 - Lekiu Importing Co. Ltd. 1995/96 to 1998 - Asian Foods	(same as above)	(same as above)	(same as above)

Notes & Definitions:

N, E, S, W North, East, South, West
 C Central
 SFR Single Family Residence
 m Meters
 adj Adjacent

Table 2 - Off-Site Historical Review Summary (1 of 2)

Operations of Potential Environmental Concern

370 and 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project No. 12108-01

Address	Approximate Distance	Street Directories (SD)	Aerial Photographs (AP)	Land Use Maps (LUM)	Fire Insurance Maps (FIM)
		Years Reviewed: 1890, 1895, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1991, 1993/94, 1995/96, 1998, and/or 2001	Years Reviewed: 1930, 1949, 1954, 1963, 1970, 1976, 1981, 1986, 1994, 1999, 2004, 2009, and 2011	Years Reviewed: 1971, 1980, and 1983	Year Reviewed: 1913, 1930, 1946, and 1956
Prior Street - Off-Site					
250 (site ID: 6478)	70 m W	1930 to 1950 - Can Junk Co. Ltd. 1940 to 1965 - Atlas and Iron Metals 1970 - Mills Steel Products 1975 - A Action Moving and Storage	1949 to 1963 - outdoor storage yard 1970 to 1999 - former warehouse building 2004 to 2011 - building removed; vacant and vegetated	1971 - manufacturing 1980 and 1983 - wholesale & warehouse	1946 - Atlas Iron and Metals - General Storage 1956 - Canadian Junk - Machinery Storage
(269)	100 m NW	1955 to 1965 - Atlas Iron & Metals (yard)	-	-	1913 and 1946 - SFR
(270)	70 m W	1905 to 1910 - Vancouver Stove Works	-	-	-
(298)	70 m W	1910 - Beam Manufacturing	-	-	1956 - "Pipe Racks", "Storage", and "Burner"
310 (site ID: 6477)	adj. W	1930 to 1950 - Great Western Smelting Co. 1955 to 1960 - Canada Metal - Plant No.2 1965 - Wallace Transfer and Storage	1949 to 1954 - outdoor storage yard on E portion; former building on W portion 1963 - outdoor storage yard removed and trucks parked on E portion 1970 to 2011 - former building removed and existing building on E portion	1971 - manufacturing 1980 and 1983 - wholesale & warehouse	1946 - Great West Smelting - wood floors on N portion; concrete floors on S portion; boiler on SE portion 1956 - Great West Smelting
(324)	adj. W	1905 to 1910 - Pacific Box Factory	-	-	-

Notes & Definitions:

- N, E, S, W North, East, South, West
- C Central
- SFR Single Family Residence
- m Meters
- adj Adjacent
- Pertinent information was not revealed or required
- BOLD** Property is listed in the MOE Site Registry

Table 2 - Off-Site Historical Review Summary (2 of 2)

Operations of Potential Environmental Concern

370 and 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project No. 12108-01

Address	Approximate Distance	Street Directories (SD)	Aerial Photographs (AP)	Land Use Maps (LUM)	Fire Insurance Maps (FIM)
		Years Reviewed: 1890, 1895, 1900, 1905, 1910, 1915, 1920, 1925, 1930, 1935, 1940, 1945, 1950, 1955, 1960, 1965, 1970, 1975, 1980, 1985, 1990, 1991, 1993/94, 1995/96, 1998, and/or 2001	Years Reviewed: 1930, 1949, 1954, 1963, 1970, 1976, 1981, 1986, 1994, 1999, 2004, 2009, and 2011	Years Reviewed: 1971, 1980, and 1983	Year Reviewed: 1913, 1930, 1946, and 1956
Prior Street - Off-Site (Continued)					
408 (410)	adj W of 456 Prior Street	1910 - City Fuel Co. 1945 to 1950 - Atlas Iron (yard)	1930 to 2011 - Vacant	1971 - commercial 1980 and 1983 - parking	-
413	20 m N	1955 - Service Auto Wreckers - storage 1955 - Empress Garage 1960 - Central Auto Body 1965 - Wallace Service - auto garage	1949 to 1976 - former building on N portion 1981 - former building removed; vacant 1986 to 2011 - existing SFR	1971 - manufacturing 1980 - vacant 1983 - residential	-
(480) 496	adj E	1925 - Great West Cartage 1935 to 1965 - Ault & Wiborg - ink manufacturers	1949 to 2011 - existing commercial/industrial building	1971 - commercial 1980 and 1983 - wholesale & warehouse	1913 - Herondale Farm - Bone Crushing 1930 - Junk Storage and Stable 1956 - Printers Ink Manufacturing
South of the Site - Off-Site					
1002 Station Street (site ID: 1100)	adj S	1920 to 1955 - various railway stations and rail yards	1930 to 1963 - former rail yards 1970 to 1986 - three former buildings located approximately 10 m S of the Site (with two additional outbuildings). 1994 to 2004 - rail yard and associated buildings removed; vacant and partially vegetated 2009 - former buildings located on NW portion (currently Trillium Park) 2011 - vacant and under construction (buildings removed from Trillium Park)	1971, 1980, and 19803 - various rail yards	1930 - Northern Pacific Railway Freight Shed. Oil stored in barrels, approximately 60 m SW of the Site. 1946 - Repair and Machine Shops associated with "Finning Tractor and Equipment" approx. 60 m SW of the Site; portions of the repair shop are indicated to have had wood floors. 1956 - Repair and Machine Shops associated with "Finning Tractor and Equipment" approx. 60 m SW; "oil storage" shed approx. 100 m SW of the Site; and machine storage approximately 30 m SW of the Site.
(580 Malkin) (site ID: 12143)	20 m SE				

Notes & Definitions:

- N, E, S, W North, East, South, West
- C Central
- SFR Single Family Residence
- m Meters
- adj Adjacent
- Pertinent information was not revealed or required
- BOLD** Property is listed in the MOE Site Registry

Table 3 - Areas of Potential Environmental Concern (1 of 2)

370 and 456 Prior Street, Vancouver, BC
 Le Kiu Holdings Ltd.
 Project No. 12108-01



Address	Approximate Distance	Operation of Potential Concern	APEC Potential	Rationale
Prior Street - Off-Site				
250 (site ID: 6478)	70 m W	1930 to 1950 - Can Junk Co. Ltd. 1940 to 1965 - Atlas and Iron Metals 1956 - Canadian Junk - Machinery Storage 1970 - Mills Steel Products 1971 - manufacturing (LUM) 1975 - A Action Moving and Storage	Low	Based on the cross to down-gradient distance from the Site, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
(269)	100 m NW	1955 to 1965 - Atlas Iron & Metals (yard)	Low	Based on the cross-gradient distance from the Site, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
(270)	70 m W	1905 to 1910 - Vancouver Stove Works	Low	Based on the duration since the former operations has ceased and the cross to down-gradient distance from the Site, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
(298)	70 m W	1910 - Beam Manufacturing 1956 - "Pipe Racks", "Storage", and "Burner"	Low	Based on the duration since the former operations has ceased and the cross to down-gradient distance from the Site, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
310 (site ID: 6477)	adj. W	1930 to 1950 - Great Western Smelting Co. 1946 - Great West Smelting - wood floors on N portion; concrete floors on S portion; boiler on SE portion 1955 to 1960 - Canada Metal - Plant No.2 1965 - Wallace Transfer and Storage	Potential	The property is listed in the MOE Site Registry as "Active – Under Remediation"; however, further activities were not reported for the property. Based on the adjacent proximity to the Site and the duration of the former smelting operations, there is considered to be a moderate potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
(324)	adj. W	1905 to 1910 - Pacific Box Factory	Low	Based on the duration since the former operations has ceased, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

Notes & Definitions:

- N, E, S, W North, East, South, West
- C Central
- adj Adjacent
- m Meters
- APEC Area of Potential Environmental Concern
- BOLD** Property is listed in the MOE Site Registry
- CofC Certificate of Compliance
- CSR Contaminated Site Regulation
- ESA Environmental Site Assessment
- FIM Fire Insurance Map (Table 2)
- GW Groundwater
- LUM Land Use Map (Table 2)
- MOE Ministry of Environment
- NOIR Notice of Independent Remediation
- SFR Single Family Residence
- Pertinent information was not revealed or required

Table 3 - Areas of Potential Environmental Concern (2 of 2)

370 and 456 Prior Street, Vancouver, BC
 Le Kiu Holdings Ltd.
 Project No. 12108-01

Address	Approximate Distance	Operation of Potential Concern	APEC Potential	Rationale
Prior Street - Off-Site (Continued)				
408 (410)	adj W of 456 Prior Street	1910 - City Fuel Co. 1945 to 1950 - Atlas Iron (yard)*	Low	Aerial photographs show that the property has been vacant since the 1930s; therefore, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
413	20 m N	1955 - Service Auto Wreckers - storage 1955 - Empress Garage 1960 - Central Auto Body 1965 - Wallace Service - auto garage	Low	A former building was located on the N portion of the property, approx. 40 m N of the Site, from the 1940s to the 1970s. In the 1980s, the property was vacant and then redeveloped with the existing SFR. Based on the cross-gradient distance of the former building to the Site and the redevelopment of the property, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
(480) 496	adj E	1925 - Great West Cartage 1930 - Junk Storage and Stable (FIM) 1935 to 1965 - Ault & Wiborg - ink manufacturers 1956 - Printers Ink Manufacturing (FIM)	Potential	Aerial photographs show that the existing building has been located adjacent to the E of the Site since the 1930s. The building was occupied by an ink manufacturer from the mid-1930s to the late 1960s. Given that the property has not been redeveloped and that it is located adjacent and up-gradient to the Site, there is considered to be a moderate potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
South of the Site - Off-Site				
	adj S	1920 to 1955 - various railway stations and rail yards 1930 - Northern Pacific Railway Freight Shed. Oil stored in barrels, approximately 60 m SW of the Site. 1946 - Repair and Machine Shops associated with "Finning Tractor and Equipment" approx. 60 m SW of the Site; portions of the repair shop are indicated to have had wood floors. 1956 - Repair and Machine Shops associated with "Finning Tractor and Equipment" approx. 60 m SW; "oil storage" shed approx. 100 m SW of the Site; and machine storage approximately 30 m SW of the Site.	Potential	FIMs and APs show various repair and machine shops were located to the southwest of the Site from the 1930s, or earlier, to the 1980s. In addition, APs show three former buildings located approximately 10 m south of the Site, from the early 1970s to the late 1980s. The property is listed in the MOE Site Registry as "Active - Under Remediation". The property was classified as non-high risk and a NOIR completion was submitted in November 2011. Based on the adjacent proximity to the Site, the unknown details of the investigations conducted on the property, and that the property has not been redeveloped, there is considered to be a potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.
	20 m SE	1920 to 1955 - various railway stations and rail yards	Low	580 Malkin Street is listed in the MOE Site Registry as "Active - Remediation Complete". In November 2010, the property was classified as non-high risk and a C of C was issued using risk-based standards in December 2010. Based on the cross-gradient distance from the Site and the issuance of a C of C in 2010, there is considered to be a low potential for constituents of concern to be present in the Site soil, groundwater, and/or vapour at concentrations greater than the CSR standards.

* Aerial photographs show that the property has been vacant since the 1930s; therefore, it is anticipated that this listing was associated with 250 Prior Street (which was occupied by Atlas and Iron Metals from 1940 to 1965).

Notes & Definitions:

- N, E, S, W North, East, South, West
- C Central
- adj Adjacent
- m Meters
- APEC Area of Potential Environmental Concern
- BOLD** Property is listed in the MOE Site Registry
- CofC Certificate of Compliance
- CSR Contaminated Site Regulation
- ESA Environmental Site Assessment
- FIM Fire Insurance Map (Table 2)
- GW Groundwater
- LUM Land Use Map (Table 2)
- MOE Ministry of Environment
- NOIR Notice of Independent Remediation
- SFR Single Family Residence
- Pertinent information was not revealed or required

APPENDIX A
PHOTOGRAPHIC DOCUMENTATION



Photograph 1: The east portion of 456 Prior Street
(looking west from Malkin Road)



Photograph 2: The south portion of 456 Prior Street
(looking northwest from 580 Malkin Street)



Photograph 3: The former propane fuelling station on the northeast portion of 456 Prior Street (looking northeast)



Photograph 4: The north portion of 456 Prior Street (looking west)



Photograph 5: The portion of the Site at 370 Prior Street (looking north)



Photograph 6: The west portion of 456 Prior Street (looking northeast)



Photograph 7: The concrete pad on the northwest portion of 456 Prior Street (looking south)



Photograph 8: A cut-off metal pipe observed on the northwest portion of 456 Prior Street (looking south)

APPENDIX B

CURRENT LAND TITLE

TITLE SEARCH PRINT

2014-05-21, 14:55:23

Requestor: jrestiaux

Folio/File Reference:

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN******Land Title District**

Land Title Office

VANCOUVER

VANCOUVER

Title Number

From Title Number

BB1117482

BX100203

Application Received

2009-11-03

Application Entered

2009-11-07

Registered Owner in Fee Simple

Registered Owner/Mailing Address:

LEKIU HOLDINGS LTD., INC.NO. 865077
450 PRIOR STREET
VANCOUVER, BC
V6A 2E5**Taxation Authority**

CITY OF VANCOUVER

Description of Land

Parcel Identifier:

010-292-187

Legal Description:

LOT A BLOCKS 2 TO 7, 9 AND 20 DISTRICT LOTS 181, 196 AND 2037 PLAN 7989

Legal NotationsNOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE BM92449
FILED 1998-03-30**Charges, Liens and Interests**

Nature:

EASEMENT

Registration Number:

15517M

Registration Date and Time:

1939-11-28 14:06

Registered Owner:

CITY OF VANCOUVER

Remarks:

SEE SKETCH ANNEXED INTER ALIA

Nature:

EASEMENT AND INDEMNITY AGREEMENT

Registration Number:

106415M

Registration Date and Time:

1949-04-12 10:28

Registered Owner:

CITY OF VANCOUVER

TITLE SEARCH PRINT

2014-05-21, 14:55:23

Requestor: jrestiaux

Folio/File Reference:

Nature: LEASE
Registration Number: 112293M
Registration Date and Time: 1949-08-25 10:50
Registered Owner: SLADE & STEWART LTD.
INCORPORATION NO. 378818
SEE DF GD32992
Remarks: LEASE FOR 25 YEARS INTER ALIA
ASSIGNED TO BE341229

Nature: LEASE
Registration Number: BE341229
Registration Date and Time: 1991-12-10 09:37
Registered Owner: 401684 B.C. LTD.
INCORPORATION NO. 401684
Remarks: ASSIGNMENT OF 112293M REC'D 25/08/1949 @ 10:50
INTER ALIA

Nature: MORTGAGE
Registration Number: BG316870
Registration Date and Time: 1993-09-01 14:28
Registered Owner: HONGKONG BANK OF CANADA
Remarks: ITER ALIA

Nature: ASSIGNMENT OF RENTS
Registration Number: BG316871
Registration Date and Time: 1993-09-01 14:28
Registered Owner: HONGKONG BANK OF CANADA
Remarks: SEE BG316870
INTER ALIA

Nature: ASSIGNMENT OF RENTS
Registration Number: BG316871A
Registration Date and Time: 1993-09-01 14:28
Registered Owner: HONGKONG BANK OF CANADA
Remarks: INTER ALIA

Nature: PRIORITY AGREEMENT
Registration Number: BH312347
Registration Date and Time: 1994-08-24 09:32
Remarks: GRANTING BG316870 PRIORITY OVER
112293M AND BE341229
INTER ALIA

TITLE SEARCH PRINT

2014-05-21, 14:55:23

Requestor: jrestiaux

Folio/File Reference:

Nature:	PRIORITY AGREEMENT
Registration Number:	BH312348
Registration Date and Time:	1994-08-24 09:32
Remarks:	GRANTING BG316871 PRIORITY OVER 112293M AND BE341229 INTER ALIA

Duplicate Indefeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

TITLE SEARCH PRINT

2014-05-21, 14:51:12

Requestor: jrestiaux

Folio/File Reference:

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN******Land Title District**

Land Title Office

VANCOUVER

VANCOUVER

Title Number

From Title Number

BB1117483

BX100204

Application Received

2009-11-03

Application Entered

2009-11-07

Registered Owner in Fee Simple

Registered Owner/Mailing Address:

LEKIU HOLDINGS LTD., INC.NO. 865077
450 PRIOR STREET
VANCOUVER, BC
V6A 2E5**Taxation Authority**

CITY OF VANCOUVER

Description of Land

Parcel Identifier:

010-292-209

Legal Description:

LOT B BLOCKS 2 TO 7, 9 AND 20 DISTRICT LOTS 181, 196 AND 2037 PLAN 7989

Legal NotationsNOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE BM92450
FILED 1998-03-30**Charges, Liens and Interests**

Nature:

LEASE

Registration Number:

112293M

Registration Date and Time:

1949-08-25 10:50

Registered Owner:

SLADE & STEWART LTD.
INCORPORATION NO. 378818
SEE DF GD32992

Remarks:

LEASE FOR 25 YEARS INTER ALIA
ASSIGNED TO BE341229

Nature:

EASEMENT AND INDEMNITY AGREEMENT

Registration Number:

301095M

Registration Date and Time:

1959-11-02 14:18

Registered Owner:

CITY OF VANCOUVER

TITLE SEARCH PRINT

2014-05-21, 14:51:12

Requestor: jrestiaux

Folio/File Reference:

Nature: SUB LEASE
Registration Number: N2307
Registration Date and Time: 1985-01-11 14:32
Registered Owner: LEKIU IMPORTING CO. LTD.
INCORPORATION NO. 27384
Remarks: LEASE OF LEASE PART SHOWN OUTLINED RED ON SKETCH
PLAN ANNEXED SUB-LEASE OF LEASE 112293M WITH RIGHT
OF RENEWAL

Nature: RIGHT OF FIRST REFUSAL
Registration Number: N2308
Registration Date and Time: 1985-01-11 14:32
Registered Owner: LEKIU IMPORTING CO. LTD.
INCORPORATION NO. 27384
Remarks: TO LEASE, SEE N2307

Nature: MORTGAGE
Registration Number: N37824
Registration Date and Time: 1985-05-22 13:05
Registered Owner: BANK OF BRITISH COLUMBIA
Remarks: MORTGAGE OF LEASE N2307

Nature: LEASE
Registration Number: BE341229
Registration Date and Time: 1991-12-10 09:37
Registered Owner: 401684 B.C. LTD.
INCORPORATION NO. 401684
Remarks: ASSIGNMENT OF 112293M REC'D 25/08/1949 @ 10:50
INTER ALIA

Nature: MORTGAGE
Registration Number: BG316870
Registration Date and Time: 1993-09-01 14:28
Registered Owner: HONGKONG BANK OF CANADA
Remarks: ITER ALIA

Nature: ASSIGNMENT OF RENTS
Registration Number: BG316871
Registration Date and Time: 1993-09-01 14:28
Registered Owner: HONGKONG BANK OF CANADA
Remarks: SEE BG316870
INTER ALIA

TITLE SEARCH PRINT

2014-05-21, 14:51:12

Requestor: jrestiaux

Folio/File Reference:

Nature:	ASSIGNMENT OF RENTS
Registration Number:	BG316871A
Registration Date and Time:	1993-09-01 14:28
Registered Owner:	HONGKONG BANK OF CANADA
Remarks:	INTER ALIA

Nature:	PRIORITY AGREEMENT
Registration Number:	BH312347
Registration Date and Time:	1994-08-24 09:32
Remarks:	GRANTING BG316870 PRIORITY OVER 112293M AND BE341229 INTER ALIA

Nature:	PRIORITY AGREEMENT
Registration Number:	BH312348
Registration Date and Time:	1994-08-24 09:32
Remarks:	GRANTING BG316871 PRIORITY OVER 112293M AND BE341229 INTER ALIA

Duplicate Infeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

APPENDIX C

MINISTRY OF ENVIRONMENT SITE REGISTRY SEARCH RESULTS

As Of: MAY 04, 2014 BC Online: Site Registry 14/05/09
 For: PB64131 KEYSTONE ENVIRONMENTAL LTD. 11:52:11
 Folio: 12108 Page 1

46 records selected for 0.5 km from latitude 49 deg, 16 min, 34.6 sec
 and Longitude 123 deg, 5 min, 41.3 sec

Site Id	Last upd	Address / City
0000027	12SEP19	140 KEEFER STREET VANCOUVER
0000046	10NOV11	941 MAIN STREET VANCOUVER
0000247	10JAN07	1130 STATION STREET VANCOUVER
0000275	05JAN25	960, 980, 1002, 1004, 1006 MAIN STREET VANCOUVER
0000285	02APR19	315 TERMINAL AVENUE VANCOUVER
0000439	12JAN27	MAIN STREET AND QUEBEC STREET VANCOUVER
0000844	03JUL04	601& 615 TERMINAL AVENUE VANCOUVER
0001100	14APR05	1002 STATION STREET (FORMERLY) VANCOUVER
0001172	14MAR03	721 MAIN STREET / 133 UNION STREET VANCOUVER
0001457	04JAN20	375 TERMINAL AVENUE VANCOUVER
0003652	03OCT17	1088 QUEBEC STREET VANCOUVER
0004401	03OCT09	679 EAST GEORGIA STREET VANCOUVER
0004421	02MAY23	288 EAST GEORGIA VANCOUVER
0005589	03OCT10	1500 MAIN STREET VANCOUVER
0005915	13DEC23	125 MILLROSS AVENUE, FORMER 939 MAIN STREET VANCOUVER
0006477	13MAR27	310 PRIOR STREET VANCOUVER
0006478	13MAR27	250 PRIOR STREET VANCOUVER
0006494	10NOV18	1405 THORNTON STREET VANCOUVER
0006495	09APR23	1465 THORNTON STREET VANCOUVER
0007240	04MAR08	946-948 MAIN STREET VANCOUVER
0007402	01AUG29	295 TERMINAL AVENUE VANCOUVER
0007732	03OCT30	941 MAIN STREET VANCOUVER
0008016	04APR19	227 EAST GEORGIA STREET VANCOUVER
0008222	04NOV02	910-914 MAIN STREET VANCOUVER
0008392	13NOV12	906 MAIN STREET VANCOUVER

As Of: MAY 04, 2014 BC Online: Site Registry 14/05/09
 For: PB64131 KEYSTONE ENVIRONMENTAL LTD. 11:52:11
 Folio: 12108 Page 2

46 records selected for 0.5 km from latitude 49 deg, 16 min, 34.6 sec
 and longitude 123 deg, 5 min, 41.3 sec

Site Id	Last upd	Address / City
0008406	04FEB25	708 EAST GEORGIA STREET VANCOUVER
0009073	13FEB08	105 KEEFER STREET AND 544 COLUMBIA STREET VANCOUVER
0009216	05MAY18	189 NATIONAL AVENUE VANCOUVER
0009280		1353 MAIN STREET VANCOUVER
0009958		567 UNION STREET VANCOUVER
0010105	13DEC23	925-929 MAIN STREET VANCOUVER
0010228	09JUL23	700, 714, 718 AND 720 MAIN STREET VANCOUVER
0010387	10NOV26	570 AND 620 EVANS AVENUE VANCOUVER
0010388	09JAN09	530 EVANS AVENUE VANCOUVER
0010773	09JAN30	663 TERMINAL AVE. VANCOUVER
0010775		221 UNION STREET VANCOUVER
0010978		135 KEEFER STREET VANCOUVER
0011478	09APR03	NATIONAL AVENUE NEAR MAIN STREET VANCOUVER
0012143	11JAN20	580 MALKIN AVENUE VANCOUVER
0013964		744 EAST GEORGIA STREET VANCOUVER
0014582	12DEC05	253 KEEFER STREET VANCOUVER
0014584	12DEC05	247 KEEFER STREET (BETWEEN KEEFER ST & BACK LANE) VANCOUVER
0014587	12DEC05	LANEWAY BEHIND 253 KEEFER STREET VANCOUVER
0015528	13NOV19	MANAGEMENT AREA NORTH OF 721 MAIN STREET VANCOUVER
0015652		231 EAST PENDER STREET VANCOUVER
0016120		PRIOR STREET ADJACENT 125 MILROSS AVENUE VANCOUVER

As of: MAY 04, 2014 BC Online: Site Registry 14-05-09
Folio: 12108 For: PB64131 KEYSTONE ENVIRONMENTAL LTD. 13:44:16
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Detail Report

SITE LOCATION

Site ID: 1100 Latitude: 49d 16m 30.9s
Victoria File: 26250-20/0761 Longitude: 123d 05m 47.8s
Regional File: 26250-20/0275
Region: SURREY, LOWER MAINLAND

Site Address: 1002 STATION STREET (FORMERLY)
FALSE CREEK INDUSTRIAL LANDS
City: VANCOUVER Prov/State: BC
Postal Code:

Registered: OCT 09, 1997 Updated: APR 05, 2014 Detail Removed: APR 05, 2014

Notations: 23 Participants: 31 Associated Sites: 5
Documents: 21 Susp. Land Use: 6 Parcel Descriptions: 1

Location Description: BURLINGTON NORTHERN RAILROAD (BNR) WITHIN EAST FALSE
CREEK INDUSTRIAL LANDS. LOTS A, B, C, D, E, G, & H OF N YARD. LOCATION
DERIVED BY BC ENVIRONMENT REFERENCING RECTIFIED NAD 83
ORTHOGRAPHY-10/28/96(LOCATION CONFIRMED USING ICIS ON 2011/11/24)

Record Status: ACTIVE - UNDER REMEDIATION
Fee category: LARGE SITE, COMPLEX CONTAMINATION

NOTATIONS

Notation Type: SITE RISK CLASSIFIED - SITE IS NON-HIGH RISK
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: MAR 27, 2013 Approved: MAR 27, 2013

Ministry Contact: O' GRADY, TYLER

Notation Participants: GOLDER ASSOCIATES
Notation Roles: SUBMITTED BY

Note: NON-HIGH RISK PARCEL IS 1100 STATION STREET, VANCOUVER.

Notation Type: NOTICE OF INDEPENDENT REMEDIATION INITIATION SUBMITTED
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: NOV 21, 2011 Approved: NOV 21, 2011

Ministry Contact: SAMWAYS, JENNIFER

Notation Participants: GOLDER ASSOCIATES
Notation Roles: SUBMITTED BY

Note: START: 2010-04-08

Notation Type: NOTICE OF INDEPENDENT REMEDIATION COMPLETION SUBMITTED
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: NOV 21, 2011 Approved: NOV 21, 2011

As of: MAY 04, 2014

BC Online: Site Registry
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Folio: 12108
NOTATIONS

Ministry Contact: SAMWAYS, JENNIFER

Notation Participants
GOLDER ASSOCIATES

Notation Roles
SUBMITTED BY

Note: COMPLETED: 2010-04-14

Notation Type: MONITORING REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: OCT 31, 2011

Approved: OCT 31, 2011

Ministry Contact: WALTON, DOUG G

Notation Participants
GOLDER ASSOCIATES

Notation Roles
SUBMITTED BY

Note: REPORT RECEIVED 2011-10-31. REPORT (DATED 2011-10-25) SUBMITTED IN CONJUNCTION WITH APPROVAL IN PRINCIPLE ISSUED 1999-07-26. REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Notation Type: MONITORING REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: SEP 07, 2010

Approved: SEP 07, 2010

Ministry Contact: HACKINEN, COLEEN (SURREY)

Notation Participants
GOLDER ASSOCIATES LTD (BURNABY)

Notation Roles
SUBMITTED BY

Note: REPORT RECEIVED 2010-10-29. REPORT (DATED 2010-09-07) SUBMITTED IN CONJUNCTION WITH APPROVAL IN PRINCIPLE ISSUED 26 JULY 1999. REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Notation Type: MONITORING REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: OCT 13, 2009

Approved: OCT 13, 2009

Ministry Contact: HEWLETT, LUCY

Notation Participants
GOLDER ASSOCIATES LTD (BURNABY)

Notation Roles
SUBMITTED BY

Note: REPORT (DATED 06 OCTOBER 2009) SUBMITTED IN CONJUNCTION WITH APPROVAL IN PRINCIPLE ISSUED 26 JULY 1999. REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUL 26, 1999

Approved: JUL 26, 1999

As of: MAY 04, 2014

BC Online: Site Registry
For: PB64131 KEYSTONE ENVIRONMENTAL LTD.

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NOTATIONS

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: ANNUAL GROUNDWATER MONITORING REPORT - SITES 1100, 6477 & 6478 INCLUDED IN SAME REPORT.

Required Actions: SCHEDULE B CONDITION 1

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUL 26, 1999 Approved: JUL 26, 1999

Ministry Contact: WALTON, DOUG G

Note: ANNUAL GROUNDWATER MONITORING REPORT - SITES 1100, 6477 & 6478 INCLUDED IN SAME REPORT.

Required Actions: SCHEDULE B, CONDITION 1 -"THE GROUNDWATER AND SOILS MANAGEMENT PLAN, DESCRIBED IN REMEDIATION PLAN, FREIGHTHOUSE LANDS, VANCOUVER, B.C. ADDENDUM NO. 2, GOLDER ASSOCIATES LTD., JULY 12, 1999, WILL BE IMPLEMENTED BY A QUALIFIED ENVIRONMENTAL CONSULTANT."

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUL 26, 1999 Approved: JUL 26, 1999

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: ANNUAL GROUNDWATER MONITORING REPORT - SITES 1100, 6477 & 6478 INCLUDED IN SAME REPORT.

Required Actions: SCHEDULE B, CONDITION 1 -"THE GROUNDWATER AND SOILS MANAGEMENT PLAN, DESCRIBED IN REMEDIATION PLAN, FREIGHTHOUSE LANDS, VANCOUVER, B.C. ADDENDUM NO. 2, GOLDER ASSOCIATES LTD., JULY 12, 1999, WILL BE IMPLEMENTED BY A QUALIFIED ENVIRONMENTAL CONSULTANT."

Notation Type: APPROVAL IN PRINCIPLE ISSUED
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: JUL 26, 1999 Approved: JUL 26, 1999

Ministry Contact: EVANS, PEGGY L

Notation Participants
WALTON, DOUG G

Notation Roles
ISSUED BY

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUL 26, 1999 Approved: JUL 26, 1999

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: ANNUAL GROUNDWATER MONITORING REPORT - SITES 1100, 6477 & 6478 INCLUDED

As of: MAY 04, 2014

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For: PB64131 KEYSTONE ENVIRONMENTAL LTD.

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NOTATIONS

IN SAME REPORT.

Required Actions: SCHEDULE B, CONDITION 1 -"THE GROUNDWATER AND SOILS MANAGEMENT PLAN, DESCRIBED IN REMEDIATION PLAN, FREIGHTHOUSE LANDS, VANCOUVER, B.C. ADDENDUM NO. 2, GOLDER ASSOCIATES LTD., JULY 12, 1999, WILL BE IMPLEMENTED BY A QUALIFIED ENVIRONMENTAL CONSULTANT."

Notation Type: HISTORICAL SITE NOTIFICATION ISSUED (WMA 26.3(3))
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: AUG 18, 1997 Approved:

Ministry Contact: MCLENEHAN, ROBERT E (MELP)

Notation Type: APPROVAL IN PRINCIPLE ISSUED
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: FEB 28, 1997 Approved: FEB 28, 1997

Ministry Contact: WARD, JOHN E H

Notation Participants Notation Roles
WARD, JOHN E H ISSUED BY

Note: SUBJECT TO NINE CONDITIONS LISTED IN THE APPROVAL IN PRINCIPLE

Notation Type: RISK ASSESSMENT ACCEPTED
Notation Class: ADMINISTRATIVE
Initiated: SEP 13, 1996 Approved: SEP 13, 1996

Ministry Contact: MACFARLANE, MIKE W

Notation Participants Notation Roles
IBI GROUP ASSOCIATE PARTNERS LTD. (VANCOUVER, SUBMITTED BY
B.C.)
GOLDER ASSOCIATES LTD (BURNABY) ISSUED BY

Note: RISK ASSESSMENT ACCEPTED - ADENDUM SUBMITTED AND APPROVED.

Required Actions: ISSUE APPROVAL IN PRINCIPAL WITH CONDITIONS: SPECIAL WASTE REDUCTION PLAN, HEALTH AND SAFETY PLAN, ONGOING MONITORING

Notation Type: REMEDIAL PLAN SUBMITTED WITH RISK ASSESSMENT: INTERNAL REVIEW
Notation Class: WASTE MANAGEMENT ACT: FEE REGULATION S.35(2)
Initiated: JUL 31, 1996 Approved: JUL 31, 1996

Ministry Contact: MCLENEHAN, ROBERT E (MELP)

Note: CHEQUE FOR \$32,742 RECEIVED ON AUGUST 28/96. COVERS RESUBMISSION OF DETAILED SITE ASSESSMENT, REMEDIATION PLAN WITH RISK ASSESSMENT & APPROVAL IN PRINCIPAL.

Required Actions: REVIEW BY L. JOHNSON AND M. MACFARLANE BY END OF SEPT/96.

As of: MAY 04, 2014

BC Online: Site Registry
For: PB64131 KEYSTONE ENVIRONMENTAL LTD.

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NOTATIONS

Notation Type: REMEDIATION PLAN REPORT ACCEPTED
Notation Class: ADMINISTRATIVE
Initiated: NOV 02, 1994
Approved: NOV 02, 1994

Ministry Contact: MCLENEHAN, ROBERT E (MELP)

Notation Participants
EAST FALSE CREEK HOLDING COMPANY LTD.
Notation Roles
REQUESTED BY

Note: FOR LOT A ONLY.

Notation Type: REMEDIATION PLAN REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: MAY 24, 1994
Approved: MAY 24, 1994

Ministry Contact: POPE, DOUGLAS

Notation Participants
GOLDER ASSOCIATES LTD (BURNABY)
EAST FALSE CREEK HOLDING COMPANY LTD.
Notation Roles
SUBMITTED BY
REQUESTED BY

Note: FOR LOT A ONLY. REMEDIATION PLAN AND SOIL AND WATER MANAGEMENT PROCEDURES FOR THE FORMER BNR STATION STREET SITE, VANCOUVER, B.C.

Notation Type: CONCENTRATION CRITERIA APPROACH USED
Notation Class: ADMINISTRATIVE
Initiated: MAY 24, 1994
Approved: MAY 24, 1994

Ministry Contact: POPE, DOUGLAS

Note: FOR LOT A ONLY

Notation Type: LAND TITLE COVENANT REGISTERED
Notation Class: ADMINISTRATIVE
Initiated: DEC 29, 1993
Approved: DEC 29, 1993

Ministry Contact: MCLENEHAN, ROBERT E (MELP)

Note: FOR LOT A ONLY. MISSING

Notation Type: SITE INVESTIGATION REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: APR 01, 1993

Approved: APR 01, 1993

Ministry Contact: MCLENEHAN, ROBERT E (MELP)

Notation Participants
MTR CONSULTANTS LTD. (VANCOUVER, B.C.)
GLACIER PARK COMPANY (SEATTLE, WASH.)

Notation Roles
SUBMITTED BY
REQUESTED BY

As of: MAY 04, 2014

BC Online: Site Registry
For: PB64131 KEYSTONE ENVIRONMENTAL LTD.

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NOTATIONS

Notation Type: SITE INVESTIGATION REPORT ACCEPTED
Notation Class: ADMINISTRATIVE
Initiated: MAY 22, 1992

Approved: MAY 22, 1992

Ministry Contact: MCLENEHAN, ROBERT E (MELP)

Notation Participants
GLACIER PARK COMPANY (SEATTLE, WASH.)

Notation Roles
RECEIVED BY

Notation Type: SITE INVESTIGATION REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: MAY 12, 1992

Approved: MAY 12, 1992

Ministry Contact: OUELLET, LOUISE (MINISTRY)

Notation Participants
MTR CONSULTANTS LTD. (VANCOUVER, B.C.)
GLACIER PARK COMPANY (SEATTLE, WASH.)

Notation Roles
SUBMITTED BY
REQUESTED BY

Notation Type: SITE INVESTIGATION REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: DEC 18, 1989

Approved: DEC 18, 1989

Ministry Contact: WIENS, JOHN H (MELP)

Notation Participants
MTR CONSULTANTS LTD. (VANCOUVER, B.C.)
GLACIER PARK COMPANY (SEATTLE, WASH.)

Notation Roles
SUBMITTED BY
REQUESTED BY

Note: PRELIMINARY ENVIRONMENTAL ASSESSMENT BURLINGTON NORTHERN RAILYARD,
VANCOUVER, B.C.

=====

SITE PARTICIPANTS

Participant: ANALYTICAL SERVICE LABORATORIES LTD (VANCOUVER)
Role(s): ANALYTICAL LAB
Start Date: APR 26, 1989
End Date:

Participant:	CANTEST LIMITED (VANCOUVER)	
Role(s):	ANALYTICAL LAB	
Start Date:	SEP 27, 1991	End Date:
Participant:	CASTOR CONSULTANTS LTD. (COQUITLAM, B.C.)	
Role(s):	ENVIRONMENTAL CONSULTANT/CONTRACTOR	
Start Date:	APR 24, 1989	End Date:
Participant:	CITY OF VANCOUVER, PERMITS & LIC. DEPT. (VANCOUVER)	
Role(s):	MUNICIPAL/REGIONAL CONTACT	
Start Date:	SEP 13, 1993	End Date:
Participant:	EAST FALSE CREEK HOLDING COMPANY LTD.	

As of: MAY 04, 2014

BC Online: Site Registry
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Folio: 12108
SITE PARTICIPANTS

Role(s):	PROPERTY OWNER	
Start Date:	DEC 29, 1993	End Date:
Participant:	EMPIRE RECYCLING LTD (VANCOUVER)	
Role(s):	POTENTIALLY AFFECTED PARTY	
Start Date:	JAN 01, 1986	End Date:
Notes:	HISTORICAL START DATE	
Participant:	ENVIROCHEM SERVICES (NORTH VANCOUVER)	
Role(s):	ENVIRONMENTAL CONSULTANT/CONTRACTOR	
Start Date:	DEC 09, 1991	End Date:
Participant:	ERM-CANADA INC. (VANCOUVER)	
Role(s):	ENVIRONMENTAL CONSULTANT/CONTRACTOR	
Start Date:	APR 24, 1989	End Date:
Participant:	EVANS, PEGGY L	
Role(s):	ALTERNATE MINISTRY CONTACT	
Start Date:	JUL 26, 1999	End Date:
Participant:	GLACIER PARK COMPANY (SEATTLE, WASH.)	
Role(s):	FORMER OPERATOR FORMER PROPERTY OWNER	
Start Date:	APR 24, 1989	End Date: APR 06, 1993
Participant:	GOLDER ASSOCIATES	
Role(s):	ENVIRONMENTAL CONSULTANT/CONTRACTOR	
Start Date:	OCT 25, 2011	End Date:
Participant:	GOLDER ASSOCIATES LTD	
Role(s):	ENVIRONMENTAL CONSULTANT/CONTRACTOR	
Start Date:	MAR 02, 2007	End Date:
Participant:	GOLDER ASSOCIATES LTD (BURNABY)	
Role(s):	ENVIRONMENTAL CONSULTANT/CONTRACTOR	

Start Date: AUG 01, 1993 End Date:

Participant: GREAT WEST SMELTING CO.
 Role(s): POTENTIALLY AFFECTED PARTY
 Start Date: JAN 01, 1956 End Date:
 Notes: HISTORICAL START DATE

Participant: HACKINEN, COLEEN (SURREY)
 Role(s): ALTERNATE MINISTRY CONTACT
 Start Date: JUL 26, 1999 End Date:

Participant: HEWLETT, LUCY
 Role(s): ALTERNATE MINISTRY CONTACT
 Start Date: OCT 13, 2009 End Date:

Participant: IBI GROUP ASSOCIATE PARTNERS LTD. (VANCOUVER, B.C.)

As of: MAY 04, 2014

BC Online: Site Registry
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Folio: 12108
 SITE PARTICIPANTS

Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
 Start Date: SEP 13, 1993 End Date:

Participant: MACFARLANE, MIKE W
 Role(s): ALTERNATE MINISTRY CONTACT
 Start Date: SEP 13, 1996 End Date:

Participant: MACKENZIE AND FEIMANN LTD. (VANCOUVER)
 Role(s): POTENTIALLY AFFECTED PARTY
 Start Date: JAN 01, 1958 End Date:
 Notes: HISTORICAL START DATE

Participant: MCLENEHAN, ROBERT E (MELP)
 Role(s): MAIN MINISTRY CONTACT
 Start Date: MAY 12, 1992 End Date: DEC 24, 1999

Participant: MTR CONSULTANTS LTD. (VANCOUVER, B.C.)
 Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
 Start Date: APR 24, 1989 End Date:

Participant: OUELLET, LOUISE (MINISTRY)
 Role(s): ALTERNATE MINISTRY CONTACT
 Start Date: DEC 28, 1989 End Date: SEP 30, 1993

Participant: PITEAU KOMEX ENVIRONMENTAL (NORTH VANCOUVER)
 Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
 Start Date: APR 24, 1989 End Date:

Participant: POPE, DOUGLAS
 Role(s): ALTERNATE MINISTRY CONTACT
 Start Date: MAY 24, 1994 End Date: MAY 21, 2002

Participant:	SAMWAYS, JENNIFER	
Role(s):	ALTERNATE MINISTRY CONTACT	
Start Date:	NOV 21, 2011	End Date:
Participant:	SCHROEDER PROPERTIES LIMITED (VANCOUVER)	
Role(s):	DEVELOPER/ASSOCIATED COMPANY	
Start Date:	JUL 01, 1999	End Date:
Participant:	TRILLIUM CORPORATION (VANCOUVER)	
Role(s):	FORMER PROPERTY OWNER	
Start Date:	APR 07, 1993	End Date: DEC 28, 1993
Participant:	VANCOUVER ESPERANZA SOCIETY	
Role(s):	PROPERTY OWNER	
Start Date:	NOV 21, 2011	End Date:
Participant:	WALTON, DOUG G	
Role(s):	ALTERNATE MINISTRY CONTACT	
Start Date:	JUL 26, 1999	End Date:

As of: MAY 04, 2014

BC Online: Site Registry
For: PB64131 KEYSTONE ENVIRONMENTAL LTD.

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Folio: 12108
SITE PARTICIPANTS

Participant:	WARD, JOHN E H	
Role(s):	MAIN MINISTRY CONTACT	
Start Date:	FEB 28, 1997	End Date:
Participant:	WIENS, JOHN H (MELP)	
Role(s):	ALTERNATE MINISTRY CONTACT	
Start Date:	DEC 18, 1989	End Date: JUL 05, 1994

DOCUMENTS

Title:	RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHT-HOUSE LANDS SITE, VANCOUVER, BC - 2013 MONITORING PROGRAM	
Authored:	MAR 12, 2014	Submitted: MAR 31, 2014
Participants	Role	
GOLDER ASSOCIATES LTD	AUTHOR	
GOLDER ASSOCIATES	AUTHOR	
Title:	RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHT-HOUSE LANDS SITE, VANCOUVER, BC - 2012 MONITORING PROGRAM	
Authored:	NOV 09, 2012	Submitted: DEC 21, 2012
Participants	Role	
GOLDER ASSOCIATES	AUTHOR	
VANCOUVER ESPERANZA SOCIETY	COMMISSIONER	
Notes:	REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.	

Title: RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHT-HOUSE LANDS SITE, VANCOUVER, BC - 2011 MONITORING PROGRAM

Authored: OCT 25, 2011

Submitted: OCT 31, 2011

Participants
GOLDER ASSOCIATES

Role
AUTHOR

Notes: REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Title: RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHTHOUSE LANDS/TECH-PARK DEVELOPMENT SITE, VANCOUVER, BC - 2010 MONITORING PROGRAM

Authored: SEP 07, 2010

Submitted: OCT 29, 2010

Participants
GOLDER ASSOCIATES LTD (BURNABY)

Role
AUTHOR

Notes: REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Title: RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHTHOUSE LANDS/TECH-PARK DEVELOPMENT SITE, VANCOUVER, BC - 2009 MONITORING PROGRAM

Authored: OCT 06, 2009

Submitted: OCT 13, 2009

Participants
GOLDER ASSOCIATES LTD (BURNABY)

Role
AUTHOR

Notes: REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

As of: MAY 04, 2014
Folio: 12108
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BC Online: Site Registry
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Title: ANNUAL GROUNDWATER MONITORING FROMER TECH-PARK DEVELOPMENT SITE, STATION STREET, VANCOUVER, BC

Authored: MAR 27, 2008

Submitted: SEP 10, 2008

Participants
GOLDER ASSOCIATES LTD

Role
AUTHOR

Title: ANNUAL GROUNDWATER MONITORING FORMER TECH-PARK DEVELOPMENT SITE, STATION STREET, VANCOUVER, BC

Authored: MAR 02, 2007

Submitted: APR 02, 2007

Participants
GOLDER ASSOCIATES LTD

Role
AUTHOR

Title: REMEDIATION PLAN FREIGHTHOUSE LANDS, VANCOUVER, BC, ADDENDUM NO. 2

Authored: JUL 01, 1999

Submitted: JUL 01, 1999

Participants
GOLDER ASSOCIATES LTD (BURNABY)
SCHROEDER PROPERTIES LIMITED (VANCOUVER)

Role
AUTHOR
RECIPIENT

Title: ADDENDUM TO REMEDIATION PLAN, FREIGHTHOUSE LANDS, VANCOUVER, BC

Authored: MAR 01, 1999

Submitted: MAR 01, 1999

Participants
GOLDER ASSOCIATES LTD (BURNABY)
TRILLIUM CORPORATION (VANCOUVER)

Role
AUTHOR
COMMI SSI ONER

Title: GROUNDWATER MONITORING, FREIGHTHOUSE LANDS AND H. Y. LOUIE SITE,

VANCOUVER, BC

Authored: JAN 13, 1999

Submitted: JAN 14, 1999

Participants

GOLDER ASSOCIATES LTD (BURNABY)
TRIILLIUM CORPORATION (VANCOUVER)

Role
AUTHOR
COMMISSIONER

Notes: LETTER REPORT

Title: SCREENING ECOLOGICAL RISK ASSESSMENT FOR GROUNDWATER, FREIGHTHOUSE
LANDS, VANCOUVER, BC

Authored: FEB 05, 1997

Submitted: FEB 05, 1997

Participants

GOLDER ASSOCIATES LTD (BURNABY)
EAST FALSE CREEK HOLDING COMPANY LTD.
IBI GROUP ASSOCIATE PARTNERS LTD. (VANCOUVER,
B.C.)

Role
AUTHOR
COMMISSIONER
RECIPIENT

MCLENEHAN, ROBERT E (MELP)

REVIEWER

Notes: ADDENDUM TO THE REMEDIATION PLAN DATED JULY 31, 1996

Title: REMEDIATION PLAN FOR FREIGHTHOUSE LANDS, VANCOUVER, BC

Authored: JUL 31, 1996

Submitted: JUL 31, 1996

Participants

GOLDER ASSOCIATES LTD (BURNABY)
EAST FALSE CREEK HOLDING COMPANY LTD.
IBI GROUP ASSOCIATE PARTNERS LTD. (VANCOUVER,
B.C.)

Role
AUTHOR
COMMISSIONER
RECIPIENT

As of: MAY 04, 2014

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Title: MEETING AGENDA RISK ASSESSMENT OF FREIGHTHOUSE AND SEQUENCE 1706
LANDS

Authored: JUN 21, 1996

Submitted: JUN 21, 1996

Participants

GOLDER ASSOCIATES LTD (BURNABY)

Role
AUTHOR

Notes: OVERVIEW OF SITE DEVELOPMENT

Title: REMEDIATION PLAN AND SOIL AND WATER MANAGEMENT PROCEDURES FOR THE
FORMER BNR STATION STREET SITE, VANCOUVER, BC

Authored: MAY 01, 1994

Submitted: MAY 24, 1994

Participants

GOLDER ASSOCIATES LTD (BURNABY)
EAST FALSE CREEK HOLDING COMPANY LTD.
IBI GROUP ASSOCIATE PARTNERS LTD. (VANCOUVER,
B.C.)

Role
AUTHOR
COMMISSIONER
RECIPIENT

MCLENEHAN, ROBERT E (MELP)

REVIEWER

Title: REMEDIAL EXCAVATION AND SUPPLEMENTAL INVESTIGATION FORMER BNR AND
NOLAN TITLE PROPERTIES, VANCOUVER, BC

Authored: AUG 01, 1993

Submitted: AUG 01, 1993

Participants

GOLDER ASSOCIATES LTD (BURNABY)

Role
AUTHOR

TRILLIUM CORPORATION (VANCOUVER) COMMISSIONER
MCLENEHAN, ROBERT E (MELP) REVIEWER
Notes: FOR ADJACENT NOLAN TILE PROPERTIES ON MALKIN ROAD (SEE SITE ASSOCIATIONS)

Title: SOIL VAPOUR AND METALLIC SURVEY NOLAN TILE AND FORMER BURLINGTON
NORTHERN RAILWAY PROPERTIES, VANCOUVER, BC
Authored: JUL 01, 1993 Submitted: JUL 01, 1993

Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR
TRILLIUM CORPORATION (VANCOUVER) COMMISSIONER
MCLENEHAN, ROBERT E (MELP) REVIEWER
Notes: FOR ADJACENT NOLAN TILE PROPERTIES ON MALKIN ROAD (SEE SITE ASSOCIATIONS)

Title: PHASE IV ENVIRONMENTAL ASSESSMENT OF FORMER BURLINGTON NORTHERN
RAILWAY YARD, STATION STREET, VANCOUVER, BC
Authored: AUG 01, 1992 Submitted: APR 01, 1993

Participants Role
PI TEAU KOMEX ENVIRONMENTAL (NORTH VANCOUVER) AUTHOR
GLACIER PARK COMPANY (SEATTLE, WASH.) COMMISSIONER
MCLENEHAN, ROBERT E (MELP) REVIEWER

Title: SUMMARY REPORT: FORMER BNR YARD SITE ASSESSMENTS
Authored: MAR 01, 1992 Submitted: MAY 12, 1992

Participants Role
GLACIER PARK COMPANY (SEATTLE, WASH.) AUTHOR
OUELLET, LOUISE (MINISTRY) REVIEWER

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Title: BURLINGTON NORTHERN RAIL STATION STREET RAILYARD PHASE III -
ENVIRONMENTAL ASSESSMENT
Authored: JAN 01, 1992 Submitted: MAY 12, 1992

Participants Role
PI TEAU KOMEX ENVIRONMENTAL (NORTH VANCOUVER) AUTHOR
GLACIER PARK COMPANY (SEATTLE, WASH.) COMMISSIONER
OUELLET, LOUISE (MINISTRY) REVIEWER

Title: PHASE II ENVIRONMENTAL ASSESSMENT BN RAILYARD VANCOUVER, BC
Authored: APR 01, 1990 Submitted: MAY 12, 1992

Participants Role
MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR
GLACIER PARK COMPANY (SEATTLE, WASH.) COMMISSIONER
OUELLET, LOUISE (MINISTRY) REVIEWER

Title: PRELIMINARY ENVIRONMENTAL ASSESSMENT B.N.R. RAILYARD, VANCOUVER B.C.
Authored: JUN 01, 1989 Submitted: DEC 18, 1989

Participants Role
MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

ASSOCIATED SITES

Site id:	137	Date:	FEB 26, 1991
Notes:			
Site id:	201	Date:	FEB 26, 1991
Notes:			
Site id:	447	Date:	FEB 26, 1991
Notes:			
Site id:	6477	Date:	OCT 16, 2003
Notes:			
Site id:	6478	Date:	OCT 16, 2003
Notes:			

SUSPECTED LAND USE

- Description: CHEMICAL INDUSTRIES AND ACTIVITIES
Notes: POSSIBLE CONTAMINATION SOURCE ADJACENT PROPERTY
- Description: LANDFILL - INDUSTRIAL WASTE
Notes: POSSIBLE CONTAMINATION SOURCE ADJACENT PROPERTY
- Description: METAL SALVAGE OPERATIONS
Notes: POSSIBLE CONTAMINATION SOURCE ADJACENT PROPERTY

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- Description: METAL SMELTING/PROCESSING/FINISHING INDUSTRIES/ACTIVITIES
Notes: POSSIBLE CONTAMINATION SOURCE ADJACENT PROPERTY
- Description: PETRO. PROD., /PRODUCE WATER STRG ABOVEGRND/UNDERGRND TANK
Notes:
- Description: RAIL CAR/LOCOMOTIVE MAINTENANCE/CLEAN/SALVAGE INCL RAILYARDS
Notes:

PARCEL DESCRIPTIONS

Date Added: AUG 22, 1995 Crown Land PIN#:
 LTO PID#: 018550185 Crown Land File#:
 Land Desc: LOT A DISTRICT LOTS 196 AND 2037 PLAN LMP14138
 No activities were reported for this site

SiteRegDetailSiteID6477Lat49Long123.txt

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Detail Report

SITE LOCATION

Site ID: 6477 Latitude: 49d 16m 35.5s
Victoria File: 26250-20/6477 Longitude: 123d 05m 44.4s
Regional File:
Region: SURREY, LOWER MAINLAND

Site Address: 310 PRIOR STREET
City: VANCOUVER Prov/State: BC
Postal Code: V6A 2E5

Registered: MAR 31, 2000 Updated: MAR 27, 2013 Detail Removed: MAR 27, 2013

Notations: 0 Participants: 0 Associated Sites: 0
Documents: 0 Susp. Land Use: 0 Parcel Descriptions: 0

Location Description: LAT/LONG CONFIRMED USING GOAT BY MINISTRY STAFF

Record Status: ACTIVE - UNDER REMEDIATION
Fee category: MEDIUM SITE, COMPLEX CONTAMINATION

No activities were reported for this site

End of Detail Report

SiteRegDetailSiteID6478Lat49Long123.txt

As of: MAY 18, 2014 BC Online: Site Registry 14-05-21
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Detail Report

SITE LOCATION

Site ID: 6478 Latitude: 49d 16m 35.3s
Victoria File: 26250-20/6478 Longitude: 123d 05m 51.1s
Regional File:
Region: SURREY, LOWER MAINLAND

Site Address: 250 PRIOR STREET
City: VANCOUVER Prov/State: BC
Postal Code: V6A 2E5

Registered: MAR 31, 2000 Updated: MAR 27, 2013 Detail Removed: MAR 27, 2013

Notations: 13 Participants: 8 Associated Sites: 2
Documents: 11 Susp. Land Use: 0 Parcel Descriptions: 0

Location Description: VANCOUVER

Record Status: ACTIVE - UNDER REMEDIATION
Fee category: MEDIUM SITE, SIMPLE CONTAMINATION

=====
NOTATIONS

Notation Type: MONITORING REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: OCT 31, 2011 Approved: OCT 31, 2011

Ministry Contact: WALTON, DOUG G

Notation Participants Notation Roles
GOLDER ASSOCIATES LTD (BURNABY) SUBMITTED BY

Note: REPORT RECEIVED 2011-10-31. REPORT (DATED 2011-10-25) SUBMITTED IN
CONJUNCTION WITH APPROVAL IN PRINCIPLE ISSUED 2000-06-12. REPORT INCLUDES
SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Notation Type: MONITORING REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: SEP 07, 2010 Approved: SEP 07, 2010

Ministry Contact: HACKINEN, COLEEN (SURREY)

Notation Participants Notation Roles
GOLDER ASSOCIATES LTD (BURNABY) SUBMITTED BY

Note: REPORT RECEIVED 2010-10-29. REPORT (DATED 2010-09-07) SUBMITTED IN
CONJUNCTION WITH APPROVAL IN PRINCIPLE ISSUED 2000-06-12. REPORT INCLUDES
SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Notation Type: MONITORING REPORT SUBMITTED
Notation Class: ADMINISTRATIVE
Initiated: OCT 13, 2009 Approved: OCT 13, 2009

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Ministry Contact: HEWLETT, LUCY

Notation Participants Notation Roles
GOLDER ASSOCIATES LTD (BURNABY) SUBMITTED BY

Note: REPORT (DATED 06 OCTOBER 2009) SUBMITTED IN CONJUNCTION WITH APPROVAL IN PRINCIPLE ISSUED 12 JUNE 2000. REPORT INCLUDES SITES 1100, 6478 & 6477. REPORT FILED IN SITE 1100 FILE.

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUN 12, 2000 Approved: JUN 12, 2000

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: GOLDER 2011-10-27 TRANSMITTAL LETTER WITH 2011 MONITORING REPORT STATES "IT IS OUR UNDERSTANDING THAT THERE HAS BEEN NO SIGNIFICANT CHANGE TO THE INFORMATION PROVIDED IN 2010 WITH REGARDS TO THE SITE OR THE DEVELOPMENT SCHEDULE."

Required Actions: SCHEDULE B CONDITION 10 "THE MINISTRY WILL BE PROVIDED WITH A SCHEDULE FOR THE PROPOSED SITE DEVELOPMENT WITHIN 90 DAYS OF THE DATE OF THIS APPROVAL AND WILL BE NOTIFIED ON AN ANNUAL BASIS, THEREAFTER, OF ANY CHANGES OR ANTICIPATED CHANGES IN SCHEDULE UNTIL SUCH TIME AS THE DEVELOPMENT AND/OR REMEDIATION IS COMPLETE."

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUN 12, 2000 Approved: JUN 12, 2000

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: ANNUAL GROUNDWATER MONITORING REPORT FOR SITES 1100, 6477 & 6478 INCLUDED IN SAME REPORT.

Required Actions: SCHEDULE B CONDITION 9 - "GROUNDWATER AND SOIL MONITORING WILL BE CARRIED OUT AS DESCRIBED IN THE INSPECTION AND MONITORING PLAN SECTION OF THE REMEDIATION PLAN."

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUN 12, 2000 Approved: JUN 12, 2011

Ministry Contact: WALTON, DOUG G

Note: GOLDER 2012-12-17 TRANSMITTAL LETTER WITH 2012 MONITORING REPORT STATES "IT IS OUR UNDERSTANDING THAT THERE HAS BEEN NO SIGNIFICANT CHANGE TO THE INFORMATION PROVIDED IN 2010 WITH REGARDS TO THE SITE OR THE DEVELOPMENT SCHEDULE." ANNUAL GROUNDWATER MONITORING REPORT - SITES 1100, 6477 & 6478

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INCLUDED IN SAME REPORT.

As of: MAY 18, 2014

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Required Actions: SCHEDULE B CONDITION 9 - "GROUNDWATER AND SOIL MONITORING WILL BE CARRIED OUT AS DESCRIBED IN THE INSPECTION AND MONITORING PLAN SECTION OF THE REMEDIATION PLAN". CONDITION 10 - "THE MINISTRY WILL BE PROVIDED WITH A SCHEDULE FOR THE PROPOSED SITE DEVELOPMENT WITHIN 90 DAYS OF THE DATE OF THIS APPROVAL. THE MINISTRY WILL BE NOTIFIED ON AN ANNUAL BASIS, THEREAFTER, OF ANY CHANGES OR ANTICIPATED CHANGES IN SCHEDULE UNTIL SUCH TIME AS THE DEVELOPMENT AND/OR REMEDIATION IS COMPLETE. "

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUN 12, 2000 Approved: JUN 12, 2000

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: ANNUAL GROUNDWATER MONITORING REPORT - SITES 1100, 6477 & 6478 INCLUDED IN SAME REPORT.

Required Actions: SCHEDULE B CONDITION 9 (GROUNDWATER AND SOIL MONITORING WILL BE CARRIED OUT AS DESCRIBED IN THE INSPECTION AND MONITORING PLAN SECTION OF THE REMEDIATION PLAN).

Notation Type: APPROVAL IN PRINCIPLE ISSUED
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: JUN 12, 2000 Approved: JUN 12, 2000

Ministry Contact: WALTON, DOUG G

Notation Participants	Notation Roles
SCHROEDER PROPERTIES LIMITED (VANCOUVER)	REQUESTED BY
WALTON, DOUG G	ISSUED BY

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: JUN 12, 2000 Approved: JUN 12, 2000

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: TECHNICAL MEMO DATED 2010-10-20 FROM GOLDER ASSOCIATES ADVISES THAT "CURRENTLY, THE REMEDIATION/RE-DEVELOPMENT SCHEDULE HAS NOT BEEN ESTABLISHED WITH CERTAINTY...RE-DEVELOPMENT IS LIKELY AT LEAST TWO YEARS FROM COMMENCING. "

Required Actions: SCHEDULE B CONDITION 10 "THE MINISTRY WILL BE PROVIDED WITH A SCHEDULE FOR THE PROPOSED SITE DEVELOPMENT WITHIN 90 DAYS OF THE DATE OF THIS APPROVAL AND WILL BE NOTIFIED ON AN ANNUAL BASIS, THEREAFTER, OF ANY CHANGES OR ANTICIPATED CHANGES IN SCHEDULE UNTIL SUCH TIME AS THE DEVELOPMENT

SiteRegDetailSiteID6478Lat49Long123.txt
AND/OR REMEDIATION IS COMPLETE."

Notation Type: REQUIREMENT(S) IMPOSED IN APPROVAL IN PRINCIPLE
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL

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Initiated: JUN 12, 2000 Approved: JUN 12, 2000

Ministry Contact: HACKINEN, COLEEN (SURREY)

Note: ANNUAL GROUNDWATER MONITORING REPORT FOR SITES 1100, 6477 & 6478 INCLUDED IN SAME REPORT.

Required Actions: SCHEDULE B CONDITION 9 - "GROUNDWATER AND SOIL MONITORING WILL BE CARRIED OUT AS DESCRIBED IN THE INSPECTION AND MONITORING PLAN SECTION OF THE REMEDIATION PLAN". CONDITION 10 - "THE MINISTRY WILL BE PROVIDED WITH A SCHEDULE FOR THE PROPOSED SITE DEVELOPMENT WITHIN 90 DAYS OF THE DATE OF THIS APPROVAL. THE MINISTRY WILL BE NOTIFIED ON AN ANNUAL BASIS, THEREAFTER, OF ANY CHANGES OR ANTICIPATED CHANGES IN SCHEDULE UNTIL SUCH TIME AS THE DEVELOPMENT AND/OR REMEDIATION IS COMPLETE."

Notation Type: DETAILED SITE INVESTIGATION ORDER ISSUED (WMA 26.2(1))
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: FEB 07, 2000 Approved: FEB 07, 2000

Ministry Contact: EVANS, PEGGY L

Notation Type: REMEDIAL PLAN SUBMITTED WITHOUT RISK ASSESSMENT: INTERNAL REVIEW REQUESTED
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: FEB 07, 2000 Approved: FEB 07, 2000

Ministry Contact: EVANS, PEGGY L

Notation Type: PRELIMINARY SITE INVESTIGATION ORDER ISSUED (WMA 26.2(1))
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: FEB 07, 2000 Approved: FEB 07, 2000

Ministry Contact: EVANS, PEGGY L

SITE PARTICIPANTS

Participant: EVANS, PEGGY L
Role(s): ALTERNATE MINISTRY CONTACT
Start Date: FEB 07, 2000 End Date:

Participant: GOLDER ASSOCIATES LTD (BURNABY)
Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
Start Date: FEB 01, 2000 End Date:

Participant: HACKINEN, COLEEN (SURREY)
Role(s): ALTERNATE MINISTRY CONTACT
Start Date: JUN 12, 2000 End Date:

Participant: HARRIS, GLENN E
Role(s): MAIN MINISTRY CONTACT
Start Date: FEB 01, 2000 End Date:

As of: MAY 18, 2014
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SITE PARTICIPANTS

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Participant: HEWLETT, LUCY
Role(s): ALTERNATE MINISTRY CONTACT
Start Date: OCT 13, 2009 End Date:

Participant: ING REALTY MANAGEMENT LLC
Role(s): REALTY COMPANY
Start Date: AUG 28, 2003 End Date:

Participant: SCHROEDER PROPERTIES LIMITED (VANCOUVER)
Role(s): PROPERTY OWNER
Start Date: FEB 01, 2000 End Date:

Participant: WALTON, DOUG G
Role(s): ALTERNATE MINISTRY CONTACT
Start Date: JUN 12, 2000 End Date:

DOCUMENTS

Title: RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHT-HOUSE LANDS
SITE, VANCOUVER, BC - 2012 MONITORING PROGRAM
Authored: NOV 09, 2012 Submitted: DEC 21, 2012
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR
VANCOUVER ESPERANZA SOCIETY COMMISSIONER
Notes: REPORT INCLUDES SITES 1100, 6478 AND 6477. REPORT FILED IN SITE 1100
FILE.

Title: RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHT-HOUSE LANDS
SITE, VANCOUVER, BC - 2011 MONITORING PROGRAM
Authored: OCT 25, 2011 Submitted: OCT 31, 2011
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR
Notes: REPORT INCLUDES SITES 1100, 6478 AND 6477. REPORT FILED IN SITE 1100
FILE.

Title: RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHTHOUSE
LANDS/TECH-PARK DEVELOPMENT SITE, VANCOUVER, BC - 2010 MONITORING
PROGRAM
Authored: SEP 07, 2010 Submitted: OCT 29, 2010
Participants Role

GOLDER ASSOCIATES LTD (BURNABY) AUTHOR
Notes: REPORT INCLUDES SITES 1100, 6478 AND 6477. REPORT FILED IN SITE 1100 FILE.

Title: RESULTS OF GROUNDWATER MONITORING AT THE FORMER FREIGHTHOUSE LANDS/TECH-PARK DEVELOPMENT SITE, VANCOUVER, BC - 2009 MONITORING PROGRAM
Authored: OCT 06, 2009 Submitted: OCT 13, 2009
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR

As of: MAY 18, 2014 BC Online: Site Registry 14-05-21
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Notes: REPORT INCLUDES SITES 1100, 6478 AND 6477. REPORT FILED IN SITE 1100 FILE.

Title: ANNUAL GROUNDWATER MONITORING. FORMER TECH-PARK DEVELOPMENT, STATION STREET, VANCOUVER, BC
Authored: AUG 10, 2004 Submitted: AUG 11, 2004
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR

Title: ANNUAL GROUNDWATER MONITORING, TECH-PARK DEVELOPMENT, VANCOUVER, BC
Authored: AUG 28, 2003 Submitted: SEP 19, 2003
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR
ING REALTY MANAGEMENT LLC COMMISSIONER
WALTON, DOUG G RECIPIENT
HARRIS, GLENN E REVIEWER

Title: ANNUAL GROUNDWATER MONITORING, TECH-PARK DEVELOPMENT, VANCOUVER, BC
Authored: JUN 13, 2002 Submitted: JUN 17, 2002
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR
SCHROEDER PROPERTIES LIMITED (VANCOUVER) COMMISSIONER
HARRIS, GLENN E REVIEWER
Notes: LETTER REPORT

Title: ANNUAL GROUNDWATER MONITORING, TECH-PARK DEVELOPMENT, VANCOUVER, BC
Authored: JUN 08, 2001 Submitted: JUN 21, 2002
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR
SCHROEDER PROPERTIES LIMITED (VANCOUVER) COMMISSIONER
HARRIS, GLENN E REVIEWER

Title: REMEDIATION PLAN, 250 PRIOR STREET, VANCOUVER, BC
Authored: FEB 01, 2000 Submitted: FEB 09, 2000
Participants Role
GOLDER ASSOCIATES LTD (BURNABY) AUTHOR

Title: DETAILED ENVIRONMENTAL SITE INVESTIGATION, 250 PRIOR STREET,

SiteRegDetailSiteID6478Lat49Long123.txt

VANCOUVER, BC

Authored: FEB 01, 2000

Submitted: FEB 09, 2000

Participants

GOLDER ASSOCIATES LTD (BURNABY)

Role
AUTHOR

Title: STAGE 1 PRELIMINARY SITE INVESTIGATION, THE H.Y. LOUIE SITE, 250
PRIOR STREET, VANCOUVER, BC

Authored: FEB 01, 2000

Submitted: FEB 09, 2000

Participants

GOLDER ASSOCIATES LTD (BURNABY)
SCHROEDER PROPERTIES LIMITED (VANCOUVER)

Role
AUTHOR
COMMISSIONER

Title: REMEDIATION PLAN, 250 PRIOR STREET, VANCOUVER, BC

As of: MAY 18, 2014

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Authored: FEB 01, 2000

Submitted: FEB 09, 2000

Participants

SCHROEDER PROPERTIES LIMITED (VANCOUVER)

Role
COMMISSIONER

Title: DETAILED ENVIRONMENTAL SITE INVESTIGATION, 250 PRIOR STREET,
VANCOUVER, BC

Authored: FEB 01, 2000

Submitted: FEB 09, 2000

Participants

SCHROEDER PROPERTIES LIMITED (VANCOUVER)
HARRIS, GLENN E

Role
COMMISSIONER
REVIEWER

Title: STAGE 1 PRELIMINARY SITE INVESTIGATION, THE H.Y. LOUIE SITE, 250
PRIOR STREET, VANCOUVER, BC

Authored: FEB 01, 2000

Submitted: FEB 09, 2000

Participants

HARRIS, GLENN E

Role
REVIEWER

Title: REMEDIATION PLAN, 250 PRIOR STREET, VANCOUVER, BC

Authored: FEB 01, 2000

Submitted: FEB 09, 2000

Participants

HARRIS, GLENN E

Role
REVIEWER

=====

ASSOCIATED SITES

Site id: 1100

Date: OCT 16, 2003

Notes:

Site id: 6477

Date: OCT 16, 2003

Notes:

No activities were reported for this site

End of Detail Report

As of: MAY 04, 2014 BC Online: Site Registry 14-05-09
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Detail Report

SITE LOCATION

Site ID: 12143 Latitude: 49d 16m 29.1s
Victoria File: 25259029.12143 Longitude: 123d 05m 36.8s
Regional File: 26250-20/12143
Region: SURREY, LOWER MAINLAND

Site Address: 580 MALKIN AVENUE
City: VANCOUVER Prov/State: BC
Postal Code: V6A 2K2

Registered: MAR 19, 2010 Updated: JAN 20, 2011 Detail Removed: JAN 20, 2011

Notations: 10 Participants: 13 Associated Sites: 0
Documents: 22 Susp. Land Use: 2 Parcel Descriptions: 1

Location Description: SITE CREATED BY SITE PROFILE, ENTERED 2010-03-16.
LAT/LONG VERIFIED USING GOOGLE EARTH 2010-03-16.

Record Status: ACTIVE - REMEDIATION COMPLETE
Fee category: UNRANKED

=====
NOTATIONS

Notation Type: CERTIFICATE OF COMPLIANCE ISSUED USING RISK BASED STANDARDS
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: DEC 14, 2010 Approved: DEC 14, 2010

Ministry Contact: LOCKHART, DAVE

Notation Participants Notation Roles
VANCOUVER BOARD OF PARKS AND RECREATION RECEIVED BY
WALTON, DOUG G ISSUED BY
LARSEN, LORI C. APPROVED PROFESSIONAL

Note: ISSUED ON THE RECOMMENDATION OF AN APPROVED PROFESSIONAL (LORI C. LARSEN) UNDER PROTOCOL 6 OF THE CONTAMINATED SITES REGULATION

Required Actions: RESTRICTIONS ON LAND AND WATER USE, BUILDING CONSTRUCTION, SOIL COVER AND VEGETATION; PERFORMANCE VERIFICATION; AND RECORD KEEPING, AS SET OUT IN SCHEDULE B OF THE CERTIFICATE OF COMPLIANCE.

Notation Type: SITE RISK CLASSIFIED - SITE IS NON-HIGH RISK
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: NOV 02, 2010 Approved: NOV 02, 2010

Ministry Contact: O' GRADY, TYLER

Notation Participants Notation Roles
KEYSTONE ENVIRONMENTAL LTD. SUBMITTED BY

Notation Type: CERTIFICATE OF COMPLIANCE REQUESTED

As of: MAY 04, 2014 BC Online: Site Registry 14-05-09
Folio: 12108 For: PB64131 KEYSTONE ENVIRONMENTAL LTD. 13:44:50
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NOTATIONS

Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: OCT 28, 2010 Approved: OCT 28, 2010

Ministry Contact: HEWLETT, LUCY

Notation Participants	Notation Roles
VANCOUVER BOARD OF PARKS AND RECREATION	REQUESTED BY
KEYSTONE ENVIRONMENTAL LTD.	APPROVED PROFESSIONAL

Notation Type: NOTICE OF INDEPENDENT REMEDIATION COMPLETION SUBMITTED
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: APR 26, 2010 Approved: APR 26, 2010

Ministry Contact: SAMWAYS, JENNIFER

Notation Participants	Notation Roles
KEYSTONE ENVIRONMENTAL LTD	SUBMITTED BY

Note: COMPLETED: 2010-04-13

Notation Type: NOTICE OF INDEPENDENT REMEDIATION INITIATION SUBMITTED
Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL
Initiated: APR 08, 2010 Approved: APR 08, 2010

Ministry Contact: SAMWAYS, JENNIFER

Notation Participants	Notation Roles
KEYSTONE ENVIRONMENTAL LTD	SUBMITTED BY

Note: START: 2010-03-22

Notation Type: CASE MANAGEMENT ITEM
Notation Class: ADMINISTRATIVE
Initiated: MAR 25, 2010 Approved: MAR 25, 2010

Ministry Contact: O'GRADY, TYLER

Notation Type: SITE PROFILE - FURTHER INVESTIGATION REQUIRED BY THE MINISTRY
Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS
Initiated: MAR 16, 2010 Approved:

Ministry Contact: O'GRADY, TYLER

Note: 2010-03-16: RELEASE OF THE DEVELOPMENT PERMIT AND ZONING APPLICATION GRANTED BECAUSE IN THE OPINION OF THE DIRECTOR THE SITE DOES NOT POSE A SIGNIFICANT RISK.

Required Actions: PRELIMINARY SITE INVESTIGATION REQUIRED.

Notation Type: SITE PROFILE REVIEWED - FURTHER INVESTIGATION REQUIRED BY THE

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13:44:50

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NOTATIONS

Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL

Initiated: MAR 16, 2010

Approved:

Ministry Contact: O'GRADY, TYLER

Note: 2010-03-16: RELEASE OF THE DEVELOPMENT PERMIT AND ZONING APPLICATION GRANTED BECAUSE IN THE OPINION OF THE DIRECTOR THE SITE DOES NOT POSE A SIGNIFICANT RISK.

Required Actions: PRELIMINARY SITE INVESTIGATION REQUIRED.

Notation Type: SITE PROFILE RECEIVED

Notation Class: ENVIRONMENTAL MANAGEMENT ACT: GENERAL

Initiated: MAR 11, 2010

Approved:

Ministry Contact: O'GRADY, TYLER

Notation Participants
KEYSTONE ENVIRONMENTAL LTD

Notation Roles
SITE PROFILE SUBMITTED
BY

KEYSTONE ENVIRONMENTAL LTD

SITE PROFILE SUBMITTED
BY

Notation Type: SITE PROFILE RECEIVED

Notation Class: WASTE MANAGEMENT ACT: CONTAMINATED SITES NOTATIONS

Initiated: MAR 11, 2010

Approved:

Ministry Contact: O'GRADY, TYLER

Notation Participants
KEYSTONE ENVIRONMENTAL LTD

Notation Roles
SITE PROFILE SUBMITTED
BY

KEYSTONE ENVIRONMENTAL LTD

SITE PROFILE SUBMITTED
BY

=====

SITE PARTICIPANTS

Participant: ACTIVE EARTH ENGINEERING LTD

Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR

Start Date: JUN 12, 2009

End Date:

Participant: CITY OF VANCOUVER, PARKS BOARD (VANCOUVER)

Role(s): PROPERTY OWNER

Start Date: MAR 11, 2010

End Date:

Participant: HEWLETT, LUCY

Role(s): ALTERNATE MINISTRY CONTACT

Start Date: OCT 28, 2010 End Date:

Participant: KEYSTONE ENVIRONMENTAL LTD
Role(s): SITE PROFILE COMPLETOR

As of: MAY 04, 2014

BC Online: Site Registry
For: PB64131 KEYSTONE ENVIRONMENTAL LTD.

14-05-09
13:44:50
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Folio: 12108
SITE PARTICIPANTS

Start Date: SITE PROFILE CONTACT
MAR 11, 2010 End Date:

Participant: KEYSTONE ENVIRONMENTAL LTD.
Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
Start Date: SEP 30, 2010 End Date:

Participant: KEYSTONE ENVIRONMENTAL LTD.
Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
Start Date: AUG 01, 2010 End Date:

Participant: LEVELTON CONSULTANTS LTD
Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
Start Date: APR 27, 2006 End Date:

Participant: MINISTRY OF ENVIRONMENT
Role(s): ASSOCIATED PROVINCIAL GOVERNMENT CONTACT
Start Date: MAY 22, 1992 End Date:

Participant: MTR CONSULTANTS LTD. (VANCOUVER, B.C.)
Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
Start Date: JUN 23, 1993 End Date:

Participant: O'GRADY, TYLER
Role(s): MAIN MINISTRY CONTACT
Start Date: MAR 11, 2010 End Date:

Participant: PITEAU ASSOCIATES ENGINEERING LTD.
Role(s): ENVIRONMENTAL CONSULTANT/CONTRACTOR
Start Date: JAN 01, 1992 End Date:

Participant: SAMWAYS, JENNIFER
Role(s): ALTERNATE MINISTRY CONTACT
Start Date: APR 08, 2010 End Date:

Participant: VANCOUVER BOARD OF PARKS AND RECREATION
Role(s): PROPERTY OWNER
Start Date: OCT 28, 2010 End Date:

DOCUMENTS

Title: SUMMARY OF SITE CONDITION
Authored: OCT 18, 2010
Participants

Submitted: OCT 28, 2010
Role

LARSEN, LORI C. APPROVED PROFESSIONAL

Title: REPORT OF FINDINGS HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT -
 TRILLIUM PARK SITE - 580 MALKIN AVENUE, VANCOUVER, BC
 Authored: OCT 01, 2010 Submitted: OCT 28, 2010
 Participants Role
 KEYSTONE ENVIRONMENTAL LTD. AUTHOR

As of: MAY 04, 2014 BC Online: Site Registry 14-05-09
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Title: REPORT OF FINDINGS PRELIMINARY SITE INVESTIGATION STAGE 2, DETAILED
 SITE INVESTIGATION AND CONFIRMATION OF REMEDIATION REPORT, TRILLIUM
 PARK SITE - 5
 Authored: OCT 01, 2010 Submitted: OCT 28, 2010
 Participants Role
 KEYSTONE ENVIRONMENTAL LTD. AUTHOR

Title: SUMMARY OF SITE CONDITION
 Authored: SEP 30, 2010 Submitted: OCT 28, 2010
 Participants Role
 KEYSTONE ENVIRONMENTAL LTD. AUTHOR

Title: REPORT OF FINDINGS, CONTAMINANT TRANSPORT MODELING, TRILLIUM PARK
 SITE 580 MALKIN AVENUE, VANCOUVER, BC
 Authored: AUG 11, 2010 Submitted: OCT 28, 2010
 Participants Role
 KEYSTONE ENVIRONMENTAL LTD. AUTHOR

Title: REPORT OF FINDINGS PRELIMINARY SITE INVESTIGATION STAGE 1, TRILLIUM
 PARK SITE - 580 MALKIN AVENUE, VANCOUVER, BC
 Authored: AUG 01, 2010 Submitted: OCT 28, 2010
 Participants Role
 KEYSTONE ENVIRONMENTAL LTD. AUTHOR

Title: Soil and Groundwater Assessment at the Trillium Park Site, Former Lot
 F of Burlington Northern Railway Yard, Malkin Avenue, Vancouver, BC
 Authored: JUN 12, 2009 Submitted: OCT 28, 2010
 Participants Role
 ACTIVE EARTH ENGINEERING LTD. AUTHOR

Title: LETTER: RE: 580 MALKIN. ADDRESSED TO CITY OF VANCOUVER ENVIRONMENTAL
 PROTECTION
 Authored: MAR 02, 2009 Submitted: OCT 28, 2010
 Participants Role
 MINISTRY OF ENVIRONMENT AUTHOR

Title: REPORT: RE: GEOTECHNICAL INVESTIGATION PROPOSED TRILLIUM FIELD
 DEVELOPMENT, MALKIN AVENUE, VANCOUVER, BC
 Authored: APR 27, 2006 Submitted: OCT 28, 2010
 Participants Role

Title: LETTER: RE: PARK DEVELOPMENT PARCEL I EAST FALSE CREEK LANDS,
ADDRESSED TO THE VANCOUVER PARKS AND THE BC MINISTRY OF ENVIRONMENT,
LANDS AND PARKS
Authored: NOV 22, 1994 Submitted: OCT 28, 2010
Participants Role
MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD - VANCOUVER, BC,

As of: MAY 04, 2014 BC Online: Site Registry 14-05-09
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DOCUMENTS

SERVICE PIT HYDROCARBON CONTAMINATION REMEDIATION. ADDRESSED TO THE
BC MINISTRY OF EN
Authored: OCT 21, 1993 Submitted: OCT 28, 2010
Participants Role
MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD - VANCOUVER, BC, OIL
AND GREASE CONTAMINATED SOILS. ADDRESSED TO THE BC MINISTRY OF
ENVIRONMENT, LANDS
Authored: OCT 15, 1993 Submitted: OCT 28, 2010
Participants Role
MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD - VANCOUVER, BC,
INITIAL GENERATOR REGISTRATION. ADDRESSED TO THE BC MINISTRY OF
ENVIRONMENT, LANDS AN
Authored: SEP 21, 1993 Submitted: OCT 28, 2010
Participants Role
MINISTRY OF ENVIRONMENT AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD - VANCOUVER, BC,
REMOVAL AND TREATMENT OF OIL AND GREASE CONTAMINATED SOIL. ADDRESSED
TO THE BC MINIS
Authored: SEP 17, 1993 Submitted: OCT 28, 2010
Participants Role
MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: BURLINGTON NORTHERN RAIL STATION STREET RAILYARD,
VANCOUVER, BC. ADDRESSED TO MTR CONSULTANTS LTD.
Authored: SEP 13, 1993 Submitted: OCT 28, 2010
Participants Role
MINISTRY OF ENVIRONMENT AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD - VANCOUVER, BC,
PROPOSED SUBDIVISION PLAN AND PARKLAND DEDICATION. ADDRESSED TO
PERMITS AND LICENSES,
Authored: AUG 18, 1993 Submitted: OCT 28, 2010
Participants Role

MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD - VANCOUVER, BC, PROPOSED SUBDIVISION PLAN AND PARKLAND DEDICATION. ADDRESSED TO: TO BC ENVIRONMENT -

Authored: AUG 13, 1993 Submitted: OCT 28, 2010

Participants Role MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD, VANCOUVER, BC. ADDRESSED TO BC ENVIRONMENT ? ENVIRONMENTAL PROTECTION

Authored: JUL 26, 1993 Submitted: OCT 28, 2010

Participants Role

As of: MAY 04, 2014 BC Online: Site Registry 14-05-09

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DOCUMENTS

MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAILYARD, VANCOUVER, BC (YOUR FILE REFERENCE 2650-20/ 57). ADDRESSED TO BC ENVIRONMENT - ENVIRONMENTAL PROTECTIO

Authored: JUN 23, 1993 Submitted: OCT 28, 2010

Participants Role MTR CONSULTANTS LTD. (VANCOUVER, B.C.) AUTHOR

Title: LETTER: RE: FORMER BURLINGTON NORTHERN RAIL STATION STREET RAILYARD, VANCOUVER, BC (YOUR FILE REFERENCE 2650-20/ 57). ADDRESSED TO MTR CONSULTANTS LT

Authored: APR 17, 1993 Submitted: OCT 28, 2010

Participants Role MINISTRY OF ENVIRONMENT AUTHOR

Title: LETTER: RE: BURLINGTON NORTHERN RAIL STATION STREET RAILYARD, VANCOUVER, BC, PHASE III ? ENVIRONMENTAL ASSESSMENT. ADDRESSED TO MTR CONSULTANTS LTD

Authored: MAY 22, 1992 Submitted: OCT 28, 2010

Participants Role MINISTRY OF ENVIRONMENT AUTHOR

Title: REPORT: BURLINGTON NORTHERN RAIL STATION STREET RAILYARD, PHASE III - ENVIRONMENTAL ASSESSMENT

Authored: JAN 01, 1992 Submitted: OCT 28, 2010

Participants Role PITEAU ASSOCIATES ENGINEERING LTD. AUTHOR

SUSPECTED LAND USE

Description: PETRO. PROD., /PRODUCE WATER STRG ABOVEGRND/UNDERGRND TANK Notes: INSERTED FOR SITE PROFILE DATED 2010-03-11(described on Site Profile dated 10-03-11)

SiteRegDetailSiteID12143Lat49Long123.txt
Description: RAIL CAR/LOCOMOTIVE MAINTENANCE/CLEAN/SALVAGE INCL RAIL YARDS
Notes: INSERTED FOR SITE PROFILE DATED 2010-03-11(described on Site Profile dated 10-03-11)

=====

PARCEL DESCRIPTIONS
Date Added: MAR 11, 2010 Crown Land PIN#:
LTO PID#: 025467743 Crown Land File#:
Land Desc: LOT 6 DISTRICT LOTS 196 AND 2037 GROUP 1 NEW WESTMINSTER DISTRICT PLAN BCP802

=====

CURRENT SITE PROFILE INFORMATION (Sec. III to X)
Site Profile Completion Date: MAR 11, 2010

Local Authority Received: MAR 11, 2010

As of: MAY 04, 2014 BC Online: Site Registry 14-05-09
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Ministry Regional Manager Received: MAR 11, 2010 Decision: MAR 16, 2010
Decision: INVESTIGATION REQUIRED

Site Registrar Received: Entry Date:

III COMMERCIAL AND INDUSTRIAL PURPOSES OR ACTIVITIES ON SITE
Schedule 2

Reference	Description
F7	PETRO. PROD., /PRODUCE WATER STRG ABOVEGRND/UNDERGRND TANK
G6	RAIL CAR/LOCOMOTIVE MAINTENANCE/CLEAN/SALVAGE INCL RAIL YARDS

AREAS OF POTENTIAL CONCERN

- Petroleum, solvent or other polluting substance spills to the environment greater than 100 litres?.....NO
- Residue left after removal of piled materials such as chemicals, coal, ore, smelter slag, air quality control system baghouse dust?.....NO
- Discarded barrels, drums or tanks?.....NO
- Contamination resulting from migration of substances from other properties?.....NO

FILL MATERIALS

- Fill dirt, soil, gravel, sand or like materials from a contaminated site or from a source used for any of the activities listed under Schedule 2?.....YES
- Discarded or waste granular materials such as sand blasting grit, asphalt paving or roofing material, spent foundry casting sands, mine ore, waste rock or float?.....NO
- Dredged sediments, or sediments and debris materials originating from locations adjacent to foreshore industrial activities, or municipal sanitary or stormwater discharges?.....NO

WASTE DISPOSAL (QUESTIONS AS OF JANUARY 1 2009)

- Materials such as household garbage, mixed municipal refuse, or demolition debris?.....NO

Waste or byproducts such as tank bottoms, residues, sludge, or flocculation precipitates from industrial processes or wastewater treatment?.....NO
 Waste products from smelting or mining activities, such as smelter slag, mine tailings, or cull materials from coal processing?.....NO
 Waste products from natural gas and oil well drilling activities, such as drilling fluids and muds?.....NO
 Waste products from photographic developing or finishing laboratories; asphalt tar manufacturing; boilers, incinerators or other thermal facilities (eg. ash); appliance, small equipment or engine repair or salvage; dry cleaning operations (eg. solvents); for from the cleaning or repair of parts of boats, ships, barges, automobiles or trucks, including sandblasting grit or paint scrapings?.....NO

TANKS OR CONTAINERS USED OR STORED, OTHER THAN TANKS USED FOR RESIDENTIAL HEATING FUEL

Underground fuel or chemical storage tanks other than storage tanks for compressed gases?.....YES
 Above ground fuel or chemical storage tanks other than storage tanks for

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 compressed gases?.....NO

HAZARDOUS WASTES OR HAZARDOUS SUBSTANCES

PCB-containing electrical transformers or capacitors either at grade, attached above ground to poles, located within buildings, or stored?....NO
 Waste asbestos or asbestos containing materials such as pipe wrapping, blown-in insulation or panelling buried?.....NO
 Paints, solvents, mineral spirits or waste pest control products or pest control product containers stored in volumes greater than 205 litres?...NO

LEGAL OR REGULATORY ACTIONS OR CONSTRAINTS

Government orders or other notifications pertaining to environmental conditions or quality of soil, water, groundwater or other environmental media?.....YES
 Liens to recover costs, restrictive covenants on land use, or other charges or encumbrances, stemming from contaminants or wastes remaining onsite or from other environmental conditions?.....NO
 Government notifications relating to past or recurring environmental violations at the site or any facility located on the site?.....NO

X ADDITIONAL COMMENTS AND EXPLANATIONS

End of Detail Report

APPENDIX D

GENERAL TERMS AND CONDITIONS FOR SERVICES



KEYSTONE ENVIRONMENTAL LTD.
GENERAL TERMS AND CONDITIONS FOR SERVICES

The terms and conditions set forth below govern all work or services requested by CLIENT as described and set forth in the Proposal of Keystone Environmental Ltd. ("Keystone") attached hereto, any Purchase Order issued by CLIENT or Agreement between Keystone and CLIENT. The provisions of said Proposal or Agreement govern the scope of services to be performed, including the time schedule, compensation, and any other special terms. The terms and conditions contained herein shall otherwise apply expressly stated to the contract or inconsistent with said Proposal or Agreement.

1. COMPENSATION

Unless otherwise stated in Keystone's Proposal, CLIENT agrees to compensate Keystone in accordance with Keystone's published rate schedules in effect on the date when the services are performed. Copies of the schedules currently in effect are attached hereto. Keystone's rate schedules are revised periodically; and Keystone will notify CLIENT of any such revisions and the effective date thereof which shall not be less than thirty (30) days after receipt of such notice. As to those services for which no schedule exists, Keystone shall be compensated on a time and materials basis as set forth in any change order executed pursuant to this Agreement.

2. PAYMENT

Unless otherwise agreed to in writing, invoices will be submitted monthly. Payment of invoices is due within thirty (30) days of receipt of the invoice. Invoices not paid within (30) days after date of receipt shall be deemed delinquent.

3. INDEPENDENT CONTRACTOR

Keystone shall be an independent contractor and shall be fully independent in performing the services of work and shall not act or hold themselves out as an agent, servant or employee of CLIENT.

4. KEYSTONE'S LIMITED WARRANTY

The sole and exclusive warranty which Keystone makes with respect to the services to be provided in the performance of the work is that they shall be performed in accordance with generally accepted professional practices and CLIENT's standards and specifications to the extent accepted by Keystone and shall be performed in a skillful manner.

In the event Keystone's performance of work, or any portion thereof, fails to conform with the above stated limited warranty, Keystone shall, at its discretion and its expense, proceed expeditiously to reperform the nonconforming, or upon the mutual agreement of the parties, refund the amount of compensation paid to Keystone for such nonconforming work. In no event shall Keystone be required to bear the cost of gaining access in order to perform its warranty obligations.

5. CLIENT WARRANTY

CLIENT warrants that: it will provide to Keystone all available information regarding the site, structures, facilities, buildings, and land involved with the work and that such information shall be true and correct: it will provide all licences and permits required for the work; that all work which it performs shall be in accordance with generally accepted professional practices; and it has title to or will provide right of entry or access to all property necessary to perform the work.

6. INDEMNITY

a. Subject to the limitations of Section 7 below, Keystone agrees to indemnify, defend and hold harmless CLIENT (including its officers, directors, employees and agents) from and against any and all losses, damages, liabilities, claims, suits, and the costs and expenses incident thereto (including legal fees and reasonable costs of investigation) which any or all of them may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction or damage to any property, private or public, contamination or adverse effects on the environment or any violation or alleged violation of governmental laws, regulations, or orders, to the extent caused by or arising out of: (i) Keystone's errors or omissions or (ii) negligence on the part of Keystone in performing services hereunder.

b. CLIENT agrees to indemnify and hold harmless Keystone (including its officers, directors, employees and agents) from and against any and all losses, damages, liabilities, claims, suits and the costs and expenses incident thereto (including legal fees and reasonable costs of investigation) which any or all of them may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction or damage to any property, private or public, contamination or adverse effects on the environment or any violation or alleged violation of governmental laws, regulations, or orders,

caused by, or arising out of in whole or in part: (i) any negligence or willful misconduct of CLIENT, (ii) any breach of CLIENT of any warranties or other provisions hereunder, (iii) any condition including, but not limited to, contamination existing at the site, or (iv) contamination of other property arising or alleged to arise from or be related to the site provided, however, that such indemnification shall not apply to the extent any losses, damages, liabilities or expenses result from or arise out of: (i) any negligence or willful misconduct of Keystone; or(ii) any breach of Keystone of any warranties hereunder.

7. **LIMITATION OF LIABILITY**

Keystone's total liability, whether arising from or based upon breach of warranty, breach of contract, tort, including Keystone's negligence, strict liability, indemnity or any other cause of basis whatsoever, is expressly limited to the limits of Keystone's insurance coverage. This provision limiting Keystone's liability shall survive the termination, cancellation or expiration of any contract resulting from this Proposal and the completion of services thereunder. After three (3) years of completion of Keystone's services, any legal costs arising to defend third party claims made against Keystone in connection with the project defined in the Proposal or Agreement will be paid in full by the CLIENT.

8. **INSURANCE**

Keystone, during performance of this Agreement, will at its own expense carry Worker's Compensation Insurance within limits required by law; Comprehensive General Liability Insurance for bodily injury and for property damage; Professional Liability Insurance for errors omissions and negligence; and Comprehensive Automobile Liability Insurance for bodily injury and property damage. At CLIENT'S request, Keystone shall provide a Certificate of Insurance demonstrating Keystone's compliance with this section. Such Certificate of Insurance shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice to CLIENT.

9. **CONFIDENTIALITY**

Each party shall retain as confidential all information and data furnished to it by the other party which relate to the other party's technologies, formulae, procedures, processes, methods, trade secrets, ideas, improvements, inventions and/or computer programs, which are designated in writing by such other party as confidential at the time of transmission and are obtained or acquired by the receiving party in connection with work or services performed subject to this Proposal or Agreement, and shall not disclose such information to any third party.

However, nothing herein is meant to prevent nor shall it be interpreted as preventing either Keystone or CLIENT from disclosing and/or using said information or data; (i) when the information or data is actually known to the receiving party before being obtained or derived from the transmitting party; or (ii) when the information or data is generally available to the public without the receiving party's fault; or (iii) where the information or data is obtained or acquired in good faith at any time by the receiving party from a third party who has the right to disclose such information or data; or (iv) where a written release is obtained by the receiving party from the transmitting party; or (v) as required by law.

10. **PROTECTION OF INFORMATION**

Keystone specifically disclaims any warranties expressed or implied and does not make any representations regarding whether any information associated with conducting the work, including the report, can be protected from disclosure in responses to a request by a federal, provincial or local government agency, or in response to discovery or other legal process during the course of any litigation involving Keystone or CLIENT. Should Keystone receive such request from a third party, it will immediately advise CLIENT.

11. **FORCE MAJEURE**

Neither party shall be responsible or liable to the other for default or delay in the performance of any of its obligations hereunder (other than the payment of money for services already rendered) caused in whole or in part by strikes or other labour difficulties or disputes; governmental orders or regulations; war, riot, fire, explosion; acts of God; acts of omissions of the other party; any other like causes; or any other unlike causes which are beyond the reasonable control of the respective party.

In the event of delay in performance due to any such cause, the time for completion will be extended by a period of time reasonably necessary to overcome the effect of the delay. The party so prevented from complying shall within a reasonable time of its knowledge of the disability advise the other party of the effective cause, the performance suspended or affected and the anticipated length of time during which performance will be prevented or delayed and shall make all reasonable efforts to remove such disability as soon as possible, except for labour disputes, which shall be solely within said party's discretion. The party prevented from complying shall advise the other party when the cause of the delay or default has ended, the number of days which will be reasonably required to compensate for the period of suspension and the date when performance will be resumed. Any additional costs or expense accruing or arising from the delaying event shall be solely for the account of the CLIENT.

12. **NOTICE**
Any notice, communication, or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or sent by facsimile, wire, or certified mail, return receipt requested, postage prepaid, to the address of the party set forth below, or to such address for either party as the party may be written notice designate.
13. **ASSIGNMENT/SUBCONTRACT**
Neither party hereto shall assign this Agreement or any part thereof or any interest therein without the prior written approval of the other party hereto except as herein otherwise provided. Keystone shall not subcontract the performance of any work hereunder without the written approval of CLIENT. Subject to the foregoing limitation, the Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of the parties hereto.
14. **ESTIMATES**
To the extent the work requires Keystone to prepare opinions of probable cost, for example, opinions of probable cost for the cost of construction, such opinions shall be prepared in accordance with generally accepted engineering practice and procedure. However, Keystone has no control over construction costs, competitive bidding and market conditions, costs of financing, acquisition of land or rights-of-way and Keystone does not guarantee the accuracy of such opinion of probable cost as compared to actual costs or contractor's bid.
15. **DELAYED AGREEMENTS AND OBLIGATIONS**
The performance by Keystone of its obligations under this Agreement depends upon the CLIENT performing its obligations in a timely manner and cooperating with Keystone to the extent reasonably required for completion of the Work. Delays by CLIENT in providing information or approvals or performing its obligations set forth in this Agreement may result in an appropriate adjustment of contract price and schedule.
16. **CONSTRUCTION PHASE**
To the extent the work is related to or shall be followed by construction work not performed by Keystone, Keystone shall not be responsible during the construction phase for the construction means, methods, techniques, sequences or procedures of construction contractors, or the safety precautions and programs incident thereto, and shall not be responsible for the construction contractor's failure to perform the work in accordance with the contract documents. Keystone will not direct, supervise or control the work of the CLIENT'S contractors or the CLIENT'S subcontractors.
17. **DOCUMENTATION, RECORDS, AUDIT**
Keystone when requested by CLIENT, shall provide CLIENT with copies of all documents relating to the service(s) of work performed. Keystone shall retain true and correct records in connection with each service and/or work performed and all transactions related thereto and shall retain all such records for twelve (12) months after the end of the calendar year in which the last service pursuant to this Agreement was performed. CLIENT, at its expense and upon reasonable notice, may from time to time during the term of this Agreement, and at any time after the date the service(s) were performed up to twelve (12) months after the end of the calendar year in which the last service(s) were performed, audit all records of Keystone in connection with all costs and expenses which it was invoiced.
18. **REPORTS, DOCUMENTS AND INFORMATION**
All field data, field notes, laboratory test data, calculations, estimates and other documents prepared by Keystone in performance of the work shall remain the property of Keystone. If required as part of the work, Keystone shall prepare a written report addressing the items in the work plan including the test results. Such report shall be the property of CLIENT, Keystone shall be entitled to retain three (3) copies of such report for its internal use and reference.
- All drawings and documents produces under the terms of this Agreement are the property of Keystone, and cannot be used for any reason other than to bid and construct the project as described in the Proposal or Agreement.
19. **LIMITED USE OF REPORT**
Any report prepared as part of the work will be prepared solely for the internal use of CLIENT. Unless otherwise agreed by Keystone and CLIENT, parties agree that third parties are not to rely upon the report.
20. **SAMPLE MANAGEMENT**
Ownership of all samples obtained by Keystone from the project site is maintained by the CLIENT. Keystone will store such samples in a professional manner in a secure area for the period of time necessary to complete the project. Upon completion of the project, Keystone will return any unused samples or

portions thereof to the CLIENT or at Keystone's option dispose of the samples in a lawful manner and bill the CLIENT for all costs related thereto. Keystone will normally store samples for thirty (30) days. Written notice will be given to the CLIENT before finally disposing of samples.

21. **ACKNOWLEDGMENT AND RECOGNITION OF RISK**

CLIENT recognizes and accepts the work to be undertaken by Keystone may involve unknown undersurface conditions and hazards. CLIENT further recognizes that environmental, geologic, hydrological, and geotechnical conditions can and may vary from those encountered by Keystone at the times and locations where it obtained data and information and that limitations on available data may result in some uncertainty with respect to the interpretation of these conditions. CLIENT recognizes that the performance of services hereunder or the implementation of recommendations made by Keystone in completing the work required may alter the existing site conditions and affect the environment in the site area.

Unknown undersurface conditions, including underground utility services, tanks, pipes, cables and other works (Underground Works) may be present at the site. Keystone will conduct utility locates to obtain available information regarding the location of Underground Works in accordance with industry practice. Utility locates are not a guarantee of the location of, or existence of, Underground Works and as a result damage to Underground Works may occur. Keystone relies on utility locates and Client provided "as-built" and record drawings to determine the location and existence of Underground Works. CLIENT recognizes that the use of utility locates is not a guarantee or warranty that Underground Works may not be damaged and acknowledges that Keystone is not responsible for any damage caused to Underground Works or the repair of such damage or any resulting or related damage and any costs related to such damage.

22. **DISPOSAL OF CONTAMINATED MATERIAL**

It is understood and agreed that Keystone is not, and has no responsibility as, a generator, operator or storer of pre-existing hazardous substances or wastes found or identified at work sites. Keystone shall not directly or indirectly assume title to such hazardous or toxic substances and shall not be liable to third parties.

CLIENT will indemnify and hold harmless Keystone from and against all incurred losses, damages, costs and expenses, including but not limited to attorneys' fees, arising or resulting from actions brought by third parties alleging or identifying Keystone as a generator, operator, storer or owner of pre-existing hazardous substances or wastes found or identified at work sites.

23. **SUSPENSION OR TERMINATION**

In the event the work is terminated or suspended by CLIENT prior to the completion of the services contemplated hereunder, Keystone shall be paid for: (i) the services rendered to the date of termination or suspension, (ii) the demobilization costs, and (iii) the costs incurred with respect to noncancelable commitments.

24. **GOVERNING LAW**

This Agreement shall be governed by and interpreted pursuant to the laws of the Province of British Columbia.

25. **HEADINGS AND SEVERABILITY**

Any heading preceding the text of sections hereof is inserted solely for convenience or reference and shall not constitute a part of the Agreement and shall not effect the meanings, context, effect or construction of the Agreement. Every part, term or provision of this Agreement is severable from others. Notwithstanding any possible future finding by duly constituted authority that a particular part, term or provision is invalid, void or unenforceable, this Agreement has been made with the clear intention that the validity and enforceability of the remaining parts, terms and provision shall not be affected thereby.

26. **ENTIRE AGREEMENT**

The terms and conditions set forth herein constitute the entire Agreement and understanding or the parties relating to the provision of work or services by Keystone to CLIENT, and merges and supersedes all prior agreements, commitments, representation, writings, and discussions between them and shall be incorporated in all work orders, purchase orders and authorization unless otherwise so stated therein. The terms and conditions may be amended only by written instrument signed by both parties.



August 1, 2014

Mr. Victor Brent Louie
 Le Kiu Holdings Ltd.
 456 Prior Street
 Vancouver, BC V6A 2E5

Dear Mr. Louie:

**Re: DRAFT Report of Findings – Phase II Environmental Site Assessment
 370 and 456 Prior Street, Vancouver, BC
 Project No. 12108 (2.0)**

This letter report presents the draft findings of a KEYSTONE ENVIRONMENTAL™ Phase II Environmental Site Assessment (ESA) prepared for the properties located at 370 and 456 Prior Street, in the City of Vancouver, BC (the Site). It is understood that this report will be used in conjunction with the potential divestment of the Site.

1. BACKGROUND

This Phase II ESA was performed subsequent to a Phase I ESA conducted by Keystone Environmental Ltd. (Keystone Environmental) in May 2014. The Site consists of rectangular lot (370 Prior Street) and one irregularly shaped lot (456 Prior Street) located on the south side of Prior Street. One off-Site property (410 Prior Street, owned by the City of Vancouver) is located between the two portions of the Site (370 and 456 Prior Street).

The Phase I ESA indicated that the Site was occupied by a former shingle manufacturer in circa 1910. From the early 1920s, or earlier, to the mid-1940s, a former building was located on the west portion of the Site at 436 Prior Street. Historical records indicated that the former building was occupied by a contractor’s warehouse (Grant Smith & Co.) and a former logging supply operation (F&F Equipment). In the late 1940s, the former building was removed and the west and central portions of the existing warehouse were constructed. The east portion of the existing warehouse was added in the late 1950s/early 1960s. A former rail spur was located on the south perimeter of the Site, adjacent to the south of the existing warehouse, from the late 1940s to the mid-1970s. The rail spur was removed in the late 1970s, and the Site has remained relatively unchanged since the 1970s.

The Phase I ESA identified the following areas of potential environmental concern (APECs):

- **APEC 1 – Fill Material of unknown origin and quality was used to infill the former creeks on the southern portion of the Site.**

- **APEC 2** – Potential for heating oil tanks. During the Phase I ESA Site reconnaissance, two cut-off metal pipes (indicative potential vent pipes) and a circular metal cover (indicative of a fill port) were observed on the northwest side of the Site building.
- **APEC 3** – Off-Site former smelting and metal operations at 310 Prior Street from the 1930s to the 1960s (adjacent to the west of the Site).
- **APEC 4** – Off-Site former ink manufacturing operation at 496 Prior Street from the 1930s to the 1960s (adjacent to the east of the Site).
- **APEC 5** – Off-Site former rail yard at 1002 Station Street from the 1920s to the 1980s (adjacent to the south-southwest of the Site).

2. STUDY LIMITATIONS

Findings presented in this report are based upon the results of a field investigation including soil and groundwater sample analyses. Geologic observations and analytical results reflect conditions encountered at specific test locations. Site conditions (geologic, hydrogeological, and chemical characterization) may vary from that extrapolated from the data collected during this investigation. Consequently, while findings and conclusions documented in this report have been prepared in a manner consistent with that level of care and skill normally exercised by other members of the environmental science and engineering profession practising under similar circumstances in the area at the time of the performance of the work, this report is not intended, nor is it able to provide a totally comprehensive review of present or past site environmental conditions.

This report has been prepared solely for the internal use of Le Kiu Holdings Ltd., pursuant to the agreement between Keystone Environmental Ltd. and Le Kiu Holdings Ltd. A copy of the general terms and conditions associated with this agreement is attached. By using the report, Le Kiu Holdings Ltd. agrees that they will review and use the report in its entirety. Any use which other parties make of this report, or any reliance on or decisions made based on it, are the responsibility of such parties. Keystone Environmental Ltd. accepts no responsibility for damages, if any, suffered by other parties as a result of decisions made or actions based on this report.

3. APPLICABLE STANDARDS

The applicable provincial regulations used for comparison of analytical results are contained in the following documents:

- Environmental Management Act (EMA), ([SBC 2003], Chapter 53 assented to March 23, 2003)
- Contaminated Sites Regulation (CSR), 375/96 O.C. 1480/96 including amendments up to B.C. Reg. 375/96 O.C. 1480/96 and M271/2004, includes amendments up to B.C. Regulation 4/2014, January 31, 2014
- Hazardous Waste Regulation (HWR) (BC Reg. 63/88 O.C. 268/88, including amendments up to B.C. Reg. 63/2009, April 1, 2009)

3.1 Soil Standards

The Contaminated Sites Regulation (CSR) provides generic and matrix numerical soil standards for different land use categories. The matrix numerical soil standards provide standards for potential contaminants based on several site-specific factors (e.g., intake of contaminated soil, toxicity to soil invertebrates and plants). To determine the appropriate standard for a contaminant, the applicable factors for a site are first selected. The lowest standard of those for applicable factors for the site is then defined as the standard that will apply.

The Site is current zoned and used for industrial purposes. Future use of the Site may include commercial uses; therefore the CSR standards for industrial land use (IL) and commercial land use (CL) have been applied.

3.2 Groundwater Standards

The CSR contains requirements to ensure that groundwater at a site is suitable for current and future uses and is of adequate quality to protect adjacent water uses.

Aquatic Water Use Standards – Fresh and Marine Water

The CSR Aquatic Life Water Use (AW) standards apply to groundwater at sites that are within 500 m or less of a surface water body containing aquatic life, or where there is the potential for contaminated groundwater to reach within 500 m of a surface water body containing aquatic life. The east end of False Creek (the closest surface water body) is located approximately 550 m to the west southwest of the Site at its closest point. False Creek is a marine aquatic environment; therefore, Marine (AW_M) aquatic life has been applied to the Site.

Drinking Water Use Standards

The evaluation of whether drinking water (DW) standards are applicable is conducted in two stages, first for the current situation and then for the potential future situation. The answer to both the current and the future evaluation must be “no” to eliminate the application of the DW standards to the Site.

Current Use: For current use evaluation, the CSR DW standards are applicable at a site where the groundwater or surface water at or near the site (within 500 m of the site or the leading edge of a groundwater contamination source or, if groundwater flow direction has been demonstrated, 100 m up-gradient or 500 m down-gradient of the site or contamination source) is currently used for drinking water.

Future Use – Part 1: The potential for the site to support drinking water use is determined under this scenario. If there is a suitable aquifer (hydraulic conductivity greater than 1×10^{-6} m/s and aquifer yield greater than 1.3 L/min) present then there is the potential for DW standards to apply and further evaluation is required. If there is not a suitable aquifer present, then DW standards do not apply.

Future Use – Part 2: If the answer for either of the following two questions is “yes,” then DW standards do not apply to the site:

- If the natural quality of groundwater in the aquifer is unsuitable for drinking water use (total dissolved solids (TDS) are greater than 4,000 mg/L, or is contained within organic soils or muskeg)
- If there is a confining geological unit that adequately protects the aquifer (greater than or equal to 5 m thick, bulk hydraulic conductivity less than or equal to 1×10^{-7} m/s, relatively uniform and free of fractures, continuous across the extent and predicted migration pathway of the shallow subsurface contamination, and the lower 5 m has not been penetrated by contamination from the above units)

The BC Water Resource Atlas, which displays groundwater management information for the Province of BC, was accessed on May 9, 2014. A search was conducted to determine if groundwater wells were located within 500 m of the Site. Groundwater water wells were not identified within the vicinity of the Site.

Based on the observed geology at the Site, the hydraulic conductivity for the water-bearing units (sandy silt and gravel) at the Site is estimated to be greater than 1×10^{-6} m/s. A more detailed hydrogeologic investigation may rule out the applicability of CSR DW standards, however, based on the current information, DW standards are considered to be applicable to the Site. In accordance with the CSR Stage 8 amendments in January 2013, the DW standards for iron and manganese are not considered to be applicable to the Site.

Irrigation and Livestock Water Use Standards

Irrigation (IW) and livestock (LW) watering water use standards apply to groundwater located at sites with agricultural land use or are located within a provincial Agricultural Land Reserve (ALR), unless the geological unit where contamination occurs has a hydraulic conductivity less than 10^{-6} m/s or if wells or points of diversion used for livestock watering or irrigation purposes are located greater than 500 m of the Site.

The Site is not located within the ALR. Agricultural land and operations, and irrigation and livestock water wells were not identified within 500 m of the Site. Therefore, the IW and LW standards are not considered applicable to the Site.

4. SCOPE OF WORK

This Phase II ESA was conducted in July 2014. The scope of work consisted of the following tasks:

- Conducting a utility search through BC One Call to obtain information on the location of underground utilities in the area of the investigation.
- Performing an electromagnetic (EM) and Ground Penetrating Radar (GPR) survey at the Site to identify the potential presence of underground utilities at the investigation locations and underground storage tanks (USTs) on the Site.

- Drilling seven boreholes on the Site and constructing them as groundwater monitoring wells (MW14-1 to MW14-7) with soil vapour attachments (SV14-1 to SV14-7)¹.
- Collecting soil samples and groundwater samples from the boreholes/monitoring wells and submitting selected samples for laboratory analyses.
- Documenting the results of the investigation in this letter report.

5. INVESTIGATIVE PROGRAM

The following table summarized the work plan, the corresponding investigative locations and the associated potential constituents of concern (PCOCs). The investigative locations are shown on Figure 1.

Table 5-1 Work Plan and Investigative Locations

Area of Potential Environmental Concern	Investigation Location(s)	Type of Analyses Proposed	
		Soil	Groundwater
On-Site APEC #1 Fill material on the southern portion of the Site ²	MW14-1, MW14-2, MW14-6 MW14-7	LEPH, HEPH, PAH, and metals	LEPHw, PAH, and metals
On-Site APEC #2 Potential heating oil and/or other USTs	EM/GPR Scan and MW14-4	LEPH, HEPH, PAH, BTEX, VPH	LEPHw, PAH, BTEX, VPHw, metals
Off-Site APEC #3 Former smelting and metal operations at 310 Prior Street	MW14-5	N/A	LEPHw, PAH, VOC, VPHw, and metals
Off-Site APEC #4 Former ink manufacturing operation at 496 Prior Street	MW14-2, MW14-3	N/A	VOC and VPHw, metals
Off-Site APEC #5 Former rail yard at 1002 Station Street)	MW14-1, MW14-6, MW14-7	LEPH, HEPH, PAH, and metals	LEPHw, PAH, BTEX, VOC, VPHw, metals, and chlorophenols

APEC – Area of Potential Environmental Concern
BTEX – Benzene, Toluene, Ethylbenzene and Xylenes
LEPHw – Light Extractable Petroleum Hydrocarbons
MTBE - Methyl tertiary-butyl ether
EM – Electron-magnetic
GPR – Ground Penetrating Radar

MW – Monitoring Well
PAH – Polycyclic Aromatic Hydrocarbons
UST – Underground Storage Tank
VOC – Volatile Organic Compounds
VPHw – Volatile Petroleum Hydrocarbons

¹ Soil vapour samples were not collected as part of this investigation; however, they are available for future sampling (if required).

² With the exception of MW14-3, fill material was observed during of all of the boreholes.

5.1 Electro-magnetic Survey and Ground Penetrating Radar Survey

Copies of available utility drawings from BC One Call were obtained prior to drilling at the Site. A utility locator, Quadra Utility Locating Ltd. (Quadra), visited the Site with Keystone Environmental on July 9, 2014 to identify the potential presence of underground storage tanks on the Site and the presence of underground utilities in the vicinity of the proposed investigation locations prior to the commencement of drilling.

5.2 Borehole Drilling and Soil Sampling

Drilling was performed on July 10 and 11, 2014 by Uniwide Drilling Company Ltd. (Uniwide) of Burnaby, BC. A truck-mounted portable drill rig equipped with solid and hollow stem augers was used to advance each investigative location. Drilling was completed to depths of approximately 4.6 m below grade (mbg).

An attempt was made to use hollow stem augers; however, soil conditions were not favourable for the split spoon sampling methodology, as the gravel and wood waste debris content encountered in the initial fill unit limited the soil retrieval capability with this method. Auger drilling was completed using 1.5 m long interconnecting solid stem steel augers. Upon retrieval of the augers from the drill holes, approximately 1 cm of soil was removed from the outer edge of the auger flights to expose fresh soil. The soil stratigraphy was then logged and sample intervals selected. Soil samples were collected directly from the solid stem augers.

Soil samples were collected at approximately 0.8 m intervals in each of the seven boreholes. A portion of each soil sample was placed into two labelled 125 millilitres (mL) laboratory-supplied glass jars with minimal headspace and secured with Teflon[®] lids. Each sample was collected wearing new nitrile gloves to reduce the potential for cross contamination. A portion of the soil sample was placed in a Ziploc[®] polyethylene bag for field screening headspace measurements using a portable photoionization detector (MiniRAE) calibrated with isobutylene gas. This instrument cannot be used to directly quantify the concentrations of volatile constituents as determined by the laboratory but assists in sample field screening prior to sample selection for laboratory analysis.

Soil samples were selected for analyses based on field observations and soil headspace measurements. Duplicate soil samples were also collected at an approximate frequency of one duplicate sample for each 10 soil samples collected. Soil samples were placed in a chilled cooler and transported to Maxxam Analytics Inc. (Maxxam) of Burnaby, BC under standard chain of custody procedures.

5.3 Monitoring Well Construction and Groundwater Sampling

The monitoring wells were constructed using hollow stem augers to remove sloughed soils and to provide a uniform filter sand pack thickness between the well screen and borehole walls. The monitoring well screen and casing pipe was lowered into the annulus of the hollow stem auger. Annular materials (filter sand and bentonite) were introduced to the hollow-stem auger as the auger was being slowly removed from the borehole. The depth of emplacement of the monitoring well screen was dependent on the depth of the apparent water table at each location and within specific strata to be assessed. The intent was to have the well screen intersect the groundwater table.

The monitoring well screens were 1.5 m long and had 0.25 mm slot width. The well pipe and screen were composed of 0.05 m diameter schedule 40 PVC. The solid PVC riser pipes extended from the top of the screen to the well head which was sealed with a J-Plug. Filter sand was placed as a filter pack around the well screen and to at least 0.3 m above the top of the screen. To provide a seal above the sand pack and reduce the potential for vertical migration of groundwater or infiltration of surface water into the well, bentonite chips were placed above the sand pack to a depth approximately 0.3 m below the surface grade. The monitoring wells were finished with flush mounted road boxes.

Following construction, the monitoring wells were monitored for water levels and well headspace vapour levels. The wells were developed on July 14, 2014, in preparation for groundwater sampling, by surging with high density polyethylene (HDPE) inertial lift tubing, one way valve, and a surge blocks prior to withdrawing a minimum of six times the well volume of water from the well, or developing the well to a dry condition three consecutive times.

Groundwater sampling was conducted on July 15, 2014 by low flow sampling and inertial lift sampling techniques. A peristaltic pump with new, dedicated HDPE and silicone tubing was used with low flow sampling techniques to collect samples for the analysis of light extractable petroleum hydrocarbons (LEPH_w), polycyclic aromatic hydrocarbons (PAH), volatile organic compounds (VOC), volatile petroleum hydrocarbons (VPHw), chlorinated phenols and dissolved metals. Inertial lift HDPE tubing and foot valve were used to collect samples for the analysis of volatile organic compounds/volatile petroleum hydrocarbons VOC/VPHw including benzene, toluene, ethylbenzene and xylenes (BTEX). Dissolved metals samples were field filtered using 0.45 micron and 0.2 micron filters in series. The dissolved metals samples were preserved with nitric acid (HNO₃) and dissolved mercury samples were preserved with hydrochloric acid (HCl).

Groundwater samples were placed in chilled coolers after sampling and for transport to Maxxam under standard chain of custody procedures.

5.4 Soil Vapour Well Installation

Soil vapour wells SV14-1 to SV14-7 were installed in the same boreholes as groundwater monitoring wells MW14-1 to MW14-7, respectively. The soil vapour wells were constructed using a dedicated 15 cm stainless steel mesh Geoprobe® vapour screen and ¼-inch nylon tubing. The probe was placed into the borehole at depths of approximately 0.6 to 0.9 mbg. The probe was held in the centre of the open borehole while a filter sand pack was installed in the annular space surrounding the probe while the hollow stem augers were withdrawn. Bentonite was installed above and below the soil vapour probe, and was hydrated with water during installation. A 0.3 to 0.6 m layer of bentonite chips was placed directly above and below the 30 cm sand pack and vapour probe to allow rapid hydration and a more effective seal within the soil vapour annular space.

The soil vapour wells were not sampled as part of this Phase II ESA; however, they will be available for use in further investigations, if necessary.

5.5 Quality Assurance/Quality Control

5.5.1 Field QA/QC

Keystone Environmental employed field measures to confirm quality assurance and quality control (QA/QC) when performing both sample collection for laboratory analyses and general fieldwork.

To minimize the potential for cross-contamination of samples, the following procedures were used by Keystone Environmental:

- New gloves were used for each sample collected
- Tools were cleaned with Alconox™ soap and distilled water between samples
- Samples were placed in laboratory-supplied containers suitable for the analysis
- Samples were labelled and stored in a chilled cooler while in the field and during transport to the laboratory
- Samples and field duplicates were collected during each of the soil and groundwater sampling events for quality control purposes. The samples were labelled and stored in a chilled coolers with the original samples while in the field and during transport to the laboratory.

Samples were collected and submitted for analysis under chain of custody documentation to Maxxam, Analytics in Burnaby, BC. Maxxam is a Canadian Association for Laboratory Accreditation (CALA) certified laboratory. Soil and groundwater analysis was conducted in accordance with MOE procedures, and the MOE-recommended laboratory QA/QC protocols were followed.

5.5.2 Laboratory QA/QC

In addition to the field samples submitted for analyses, the laboratory initiated their own duplicate samples. The laboratory follows an internal QA/QC program which includes duplicate sample, sample blank, and spike analyses QA/QC and the results are presented on the attached laboratory certificates of analyses.

6. INVESTIGATIVE RESULTS

6.1 Ground Penetrating Radar (GPR) Scans

A GPR scan was conducted on July 9, 2014, in part to investigate the potential underground fuel storage tanks (USTs) on the Site and to identify other underground utilities in the proposed borehole locations. A subsurface anomaly approximately 3 m by 2 m, indicative of a UST, was observed during the GPR scan at the northwest corner of the Site building.

Underground utilities were not identified within 2 metres of the investigative locations.

6.2 Surficial Geology and Field Observations

The soil was classified from observations during drilling using the Unified Soil Classification System. The investigation locations are shown on Figure 1. The following is a general description of the stratigraphy encountered at the Site beneath concrete or asphalt at MW14-1 to MW14-4 on-Site.

Unit A: Brown, medium to coarse grained sand and gravel fill. This unit was moist to wet and contained brick fragments below the asphalt on the southeast side of the Site from approximately 0.15 mbg to 2.4 mbg.

Unit A was not observed at MW14-3 (northeast corner of the Site).

Unit B: Grey silty fine to medium grained sand with some gravel that was dense, and moist to wet. This unit was encountered beneath Unit A to a depth of approximately 3.6 mbg.

Unit C: Tan to light reddish-brown silty fine grained sand with trace gravel. This unit may grade to a greyish colour. This unit was encountered beneath Unit B to a depth of 4.6 mbg and is generally soft and wet but exhibit a denser form in some areas of the Site.

The following is a general description of the stratigraphy encountered at the Site beneath concrete or asphalt at MW14-5 to MW14-7 (west side of the Site):

Unit A: Dark brown to tan grey silty fine to medium grained sand with some gravel and wood waste including sawdust (fill). Brick fragments and metal debris was also observed. The unit in this area was moist to wet and ranges in depth from 1.8 to 3.8 mbg

Units B and C are similar to those described above for MW14-1 to MW14-4.

A hydrocarbon-like odour was encountered at MW14-4 (down-gradient of the UST) from approximately 0.6 mbg to 2.1 mbg within the fill unit (Unit A). The soil headspace vapour measurements from the soil samples collected ranged from 0.4 parts per million by volume (ppmv) at MW14-3 to 328 ppmv at MW14-4(1.5). The measured headspace vapours at MW14-4 (1.5) considered to be elevated and corresponds to the observed hydrocarbon-like odours at this location. This soil sample was submitted for hydrocarbon analysis. Hydrocarbon odours or staining was not observed at the remaining locations.

6.3 Hydrogeology and Field Observations

Groundwater is expected to follow regional topography flowing from areas of higher elevation to areas of lower elevation. Local groundwater flow direction may vary as a result of local conditions such as topography, geology and the presence of drainage channels and buried utilities, and is subject to confirmation with field measurements. The Site is located on approximately 550 m east-northeast of False Creek and the topography in the vicinity of the Site is relatively flat with little topographic relief. Based on the proximity to False Creek, the local groundwater flow direction is inferred to be to the southwest from the Site. Groundwater is anticipated to flow to the Site from the adjacent up-gradient residential properties located to the northeast of the Site (north side of Prior Street).

The depth to groundwater ranged from approximately 0.65 mbg at MW14-1 to 2.36 mbg at MW14-2. The well casing headspace measurements ranged from 0.7 parts per million by volume (ppmv) at MW14-6 to 81.2 ppmv at MW14-4. Hydrocarbon-like odours were observed at MW14-4; however, iridescent sheens were not observed in MW14-4 or in the remaining six monitoring wells. The measured headspace vapours at MW14-4 is considered to be elevated and corresponds to the hydrocarbon-like odour observed at this location.

6.4 Soil Analytical Results

A summary of the comparison to the standards is presented on the appended Tables 1 to 2 and on Figure 1. The laboratory certificates of analyses are attached at the end of the report. The following table summarizes the soil samples selected for laboratory analyses.

Table 6-1 Soil Samples Analyses

Sample	Analyses	Geological Unit
MW14-1 (0.6)	LEPH, HEPH, PAH, metals	Fill
MW14-2 (1.5)	LEPH, HEPH, PAH, metals	Fill
MW14-4 (1.5)	LEPH, HEPH, PAH, BTEX, VPH	Fill
MW14-5 (0.6) & Duplicate MW14-C	LEPH, HEPH, PAH, metals	Fill
MW14-6 (0.8)	LEPH, HEPH, PAH, metals	Fill
MW14-7 (3.1)	LEPH, HEPH, PAH, metals	Fill

BTEX – Benzene, Toluene, Ethylbenzene, Xylenes
HEPH – Heavy Extractable Petroleum Hydrocarbons
LEPH – Light Extractable Petroleum Hydrocarbons

PAH – Polycyclic Aromatic Hydrocarbon
VOC – Volatile Organic Compounds
VPH – Volatile Petroleum Hydrocarbons

The concentrations of LEPH, HEPH, PAH, BTEX, VPH, and/or metals in the soil samples selected for analyses were less than the CSR CL/IL standards with the exception of the following:

Table 6-2 Soil Exceedances

Sample ID (depth in m)	Constituents Exceeding Applicable Standard (measured concentration)	CL/IL CSR Standard
MW14-4 (1.4)	Benzene (0.95 µg/g)	0.04 µg/g
MW14-5 (0.6)	Copper (285 µg/g)	100-250 µg/g*
	Lead (319 µg/g)	300-200 µg/g*
	Zinc (409 µg/g)	150-600 µg/g*
MW14-6 (0.8)	Zinc (435 µg/g)	150-600 µg/g*

*pH dependent

6.5 Groundwater Analytical Results

Groundwater analytical results were compared to the CSR AW_M and DW standards. A summary of the comparison to the standards is presented on the appended Tables 3 to 6 and on Figure 2. The laboratory certificates of analyses are attached at the end of the report. The following table summarizes the groundwater samples selected for laboratory analyses.

Table 6-3 Groundwater Sample Analyses

Sample	Analyses
MW14-1	LEPHw, PAH, chlorinated phenols, dissolved metals
MW14-2	LEPHw, PAH, BTEX, VOCs, VPHw, dissolved metals
MW14-3	VOCs, VPHw
MW14-4	LEPHw, PAH, BTEX, VPHw, dissolved metals
MW14-5	LEPHw, PAH, BTEX, VOCs, VPHw, dissolved metals
MW14-6 (MW14-A duplicate)	LEPHw, PAH, chlorinated phenols, dissolved metals
MW14-7	LEPHw, PAH, chlorinated phenols, dissolved metals

BTEX – Benzene, Toluene, Ethylbenzene, Xylenes
VOC – Volatile Organic Compounds
LEPH – Light Extractable Petroleum Hydrocarbons

PAH – Polycyclic Aromatic Hydrocarbon
VPH – Volatile Petroleum Hydrocarbons

The concentrations of LEPHw, PAH, BTEX, VOC, VPHw, chlorinated phenols, and/or dissolved metals in the groundwater samples were less than the CSR AW_M and DW standards with the exception of the following:

Table 6-4 Groundwater Exceedances

Sample ID	Constituents Exceeding Applicable Standard (measured concentration)	CSR AW_M & DW Standard
MW14-2	Benzo(a)pyrene (0.012 $\mu\text{g/L}$)	DW: 0.01 $\mu\text{g/L}$
MW14-4	Dissolved Lead (10.5 $\mu\text{g/L}$)	DW: 10 $\mu\text{g/L}$
	Benzene (100 $\mu\text{g/L}$)	DW: 5 $\mu\text{g/L}$
	Ethylbenzene (640 $\mu\text{g/L}$)	DW: 2.4 $\mu\text{g/L}$
	LEPHw (3400 $\mu\text{g/L}$)	AW_M : 500 $\mu\text{g/L}$
	VPHw (3300 $\mu\text{g/L}$)	AW_M : 1500 $\mu\text{g/L}$
	Naphthalene (110 $\mu\text{g/L}$)	AW_M : 10 $\mu\text{g/L}$
MW14-6	Benzo(a)pyrene (0.084 $\mu\text{g/L}$)	DW: 0.01 $\mu\text{g/L}$
	Pyrene (0.37 $\mu\text{g/L}$)	AW_M : 0.2 $\mu\text{g/L}$
MW14-7	Benzo(a)pyrene (0.026 $\mu\text{g/L}$)	DW: 0.01 $\mu\text{g/L}$

6.6 QA/QC Results

To check the precision and accuracy of field data, QA/QC samples were collected for analysis. Field QA/QC samples consisted of collecting split duplicate samples of soil, groundwater and soil vapour. Duplicate sampling requirements are outlined in the Ministry of Environment Technical Guidance 1 on Contaminated Sites – Site Characterization and Confirmation Testing. To evaluate the laboratory protocols, during the time of analysis of the selected parameters, one in every ten samples analyzed is recommended for duplicate sample analysis. The results of the duplicate samples are used to confirm acceptable method precision to determine if the data is reliable.

The measure of the reproducibility or precision of the data is quantified by calculating the Relative Percent Difference (RPD) or Maximum Spread (MS). The RPD is calculated when the sample and duplicate concentration are both greater than or equal to five times the reported detection limit (RDL) and when the sample and/or duplicate concentration is less than five times the RDL the MS is calculated. If the concentration of both the sample and duplicated are reported less than the RDL then RPD and MS are not calculated. Sample and duplicate results that are both less than the RDL are considered to be in general agreement. To calculate the RPD the absolute value of the difference between the sample and the duplicate is divided by the average of the sample and duplicate and multiplied by 100, to obtain a percentage. To calculate the MS the sample and duplicate value are subtracted to determine if the subtracted value is less than or greater than the RDL.

Generally, RPD values greater than 35% for soil and 20% for water, suggest further review. Furthermore, MS values greater than the RDL suggest further review. If the RPD or MS are greater than the percentages and criteria detailed above then it is generally necessary to determine a cause and decide whether the effect of the precision level may alter the findings of the investigation. A RPD or MS that appears to indicate poor precision must be evaluated in relation to factors such as the sample pairing (e.g., confirming sample identification), nature of the sample (e.g., soil or groundwater, heterogeneous or homogeneous), the nature of the chemical or analysis (e.g., metals or organics) and the concentrations of the chemical (e.g., less than the applicable standard) before conclusions are drawn.

6.6.1 Field QA/QC Results

Soil

Soil sample MW14-5 (0.6) and its duplicate sample MW14-C were analyzed for LEPH/HEPH, PAH and metals. Soil analytical QA/QC results are presented in Tables 1 and 2. RPD values greater than 35% were calculated for lead and tin. The calculated MS values for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(b+j)fluoranthene, chrysene, fluoranthene, phenanthrene, pyrene, mercury and silver were greater than the RDL. All other calculable RPDs were less than 35% and all calculable MS were within the acceptable range.

The data from MW14-5(0.6) / MW14-C was reviewed for reliability. The detected concentrations for the above listed constituents exceeding the QA/QC criteria were at least an order of magnitude below the applicable standards. Furthermore, this sample pair represents fill soil that is heterogeneous in nature, which can contribute to the variability between the two samples. The difference in the sample and duplicate sample results did not change the outcome of the investigation with respect to the CSR standards. Therefore, the results are considered to be reliable and the calculated QA/QC values are considered acceptable.

Groundwater

Groundwater sample MW14-6 and its duplicate sample MW14-A were analyzed for LEPHw, HEPHw, PAH, chlorinated phenols and dissolved metals. Groundwater analytical QA/QC results are presented in Tables 3, 4 and 6. The calculated MS values for benzo(a)anthracene, benzo(a)pyrene and pyrene exceeded their RDLs. All other MS values and all RPD values were less than the laboratory detection limit or maximum acceptable RPD of 20%. RPD and MS values were not calculated for chlorinated phenols as each of the samples had concentrations less than the RDL.

The data from MW14-6 / MW14-A was reviewed for reliability. Benzo(a)pyrene and pyrene exceeded the CSR standards in the sample and duplicate sample, and were therefore considered to be in general agreement. The results are considered to be reliable and the calculated QA/QC values are considered acceptable.

6.6.2 Laboratory QA/QC Results

The laboratory QA/QC measures included method blanks, duplicate analysis, and spike and matrix spike recoveries were reviewed in addition to the Maxxam quality assurance and quality control calculations. The laboratory RPD values were within acceptable limits, or were less than five times the detection limits. The sample blank and spike analyses were also within the acceptable limits. Sample hold times of 7 to 180 days for soil and groundwater, depending on the parameter being analysed were not exceeded. Therefore, the samples and duplicates are in agreement, sample integrity has been maintained and the data is considered reliable. The laboratory completed QA/QC is provided in the Laboratory Analytical Reports attached at the end of this report.

7. SUMMARY AND DISCUSSION

This Phase II ESA was conducted to determine if PCOCs associated with the on Site and off-site APECs are present in the Site soil and groundwater at concentrations greater than the applicable standards outlined in the CSR. This investigation included the drilling of 7 boreholes, all of which were completed as groundwater monitoring wells with soil vapour attachments (MW/SV14-1 to MW/SV14-7).

A discussion regarding each of the APECs is provided below:

On-Site APEC 1: Fill material

Historical records indicate that creeks were formerly located on southern portion of the Site. These creeks were infilled with material of unknown origin and quality. To investigate this APEC, locations MW14-1, MW14-2, MW14-6 and MW14-7 were advanced on the southern portion of the Site. During the drilling, fill material was also encountered in MW14-4 and MW14-5 (northwestern portion of the Site).

Soil samples were submitted for hydrocarbon and metals analysis from the fill material at investigative locations MW14-1, MW14-2, MW14-5, MW14-6 and MW14-7. Soil sample MW14-5(0.6) had concentrations of copper, lead and zinc above the CSR CL/IL standards and soil sample MW14-6(0.8) had a zinc concentration above the CSR CL/IL standard. Hydrocarbon concentrations in the fill material samples were less than the CSR CL/IL standards. The metals concentrations at MW14-1, MW14-2 and MW14-7 and the remaining metal concentrations at MW14-5 and MW14-6 were less than the CSR CL/IL standards.

Groundwater samples from MW14-1, MW14-2, MW14-5, MW14-6 and MW14-7 were submitted for hydrocarbon and dissolved metals analysis. The concentrations of benzo(a)pyrene exceeded the CSR DW standard at MW14-2, MW14-6 and MW14-7. The concentration of pyrene exceeded the CSR AW_M standard at MW14-6. Monitoring wells MW14-2, MW14-6 and MW14-7 were screened within the fill unit. The remaining hydrocarbons at these locations were less than the CSR AW_M and DW standards. Concentrations of dissolved metals at MW14-1, MW14-2, MW14-5, MW14-6 and MW14-7 were less than the CSR AW_M and DW standards.

On-Site APEC 2: Potential heating oil and/or other USTs

A GPR scan was conducted to investigate the potential underground fuel storage tanks (USTs) on the Site. A subsurface anomaly (approximately 3 m by 2 m in size) was observed adjacent to the northwest corner of the Site building. The size and shape of the anomaly is consistent with a UST. The contents of the tank are unknown. To investigate this APEC, monitoring well MW14-4 was installed south (immediately down-gradient) of the UST.

One soil sample from MW14-4 collected at a depth of 1.5 m, in fill material exhibiting hydrocarbon-like odours, was submitted for analysis of LEPH, HEPH, PAH, BTEX and VPH. The analytical results indicated that the concentration of benzene exceeded the CSR CL/IL standard. The concentrations of LEPH, HEPH, PAH, toluene, ethylbenzene, xylenes and VPH were less than the applicable CSR CL/IL standards.

A groundwater sample was collected from MW14-4 and submitted to the laboratory for the analysis of LEPHw, PAH, BTEX, VPHw and dissolved metals. The analytical results indicated that concentrations of LEPHw, VPHw and naphthalene exceeded the CSR AW_M standards. Concentrations of benzene, ethylbenzene and dissolved lead exceeded the CSR DW standards. The dissolved lead concentration at MW14-4 (10.5 $\mu\text{g/L}$) is marginally greater than the CSR DW standard of 10 $\mu\text{g/L}$.

Based on the proximity of the soil and groundwater contamination to the property line (within 2 metres), there is a potential that contaminants have migrated off-site onto the City of Vancouver's property (between 370 and 456 Prior Street). Additional drilling would be required to confirm if the contamination has migrated off-site

Off-Site APEC 3: Former smelting and metal operation at 310 Prior Street

A former smelting and metal works operation was located at 310 Prior Street, Vancouver which is adjacent to the west of Site property 370 Prior Street. To investigate this APEC, investigative location MW14-5 was advanced on the northwestern portion of the Site.

Groundwater analytical results from MW14-5 showed that the concentrations of LEPHw, PAH, BTEX, VOCs, VPHw and dissolved metals were less than the CSR AW_M and DW standards.

Off-Site APEC 4: Former ink manufacturing operation at 496 Prior Street

Historical records indicate that a former ink manufacturer was located at 496 Prior Street which is adjacent to the east of the Site. The manufacturing operations occurred from the 1930s to the 1960s and the existing building has been on the property since the 1930s. Investigative locations MW14-2 and MW14-3 were advanced on the east-southeast and northeast portion of the Site, respectively, to assess potential groundwater impacts from the former ink manufacturing operation.

Groundwater samples from MW14-2 and MW14-3 were submitted for analysis of VOCs, VPHw and dissolved metals to investigate this off-site APEC. Concentrations of VOCs, VPHw and dissolved metals were less than the CSR AW_M and DW standards.

Off-Site APEC 5: Former rail yard at 1002 Station Street

Historical records indicate that a former rail yard, with a number of building containing locomotive and rail car repair shops and machine shops was located at 1002 Station Street, adjacent to the south of the Site from the 1930s or earlier, to the 1980s. The buildings were removed and the yard was remediated in 2011. Investigative locations MW14-1, MW14-6 and MW14-7 were advanced along the south property line to investigate this APEC.

Groundwater samples from MW14-1, MW14-6 and MW14-7 were submitted for analysis of LEPHw, PAH, BTEX, VOC, VPHw, metals, and chlorophenols. As discussed above in APEC 1, concentrations of benzo(a)pyrene exceeded the CSR DW standard at MW14-2, MW14-6 and MW14-7 and the concentration of pyrene exceeded the CSR AW_M standard at MW14-6. The source of the elevated PAHs are unknown, they could be associated with the fill material or associated with this off-site APEC. Concentrations of LEPHw, BTEX, VOC, VPHw, metals, and chlorophenols were less than the CSR AW_M and DW standards.

8. CONCLUSIONS

Constituents of concern are present in Site soil and groundwater in excess of the applicable standards of the BC Contaminated Sites Regulation.

We trust this is the information you require at this time. Please contact us should you have any questions.

Sincerely,

Keystone Environmental Ltd.

Brian Lennan, P.Geo.
Project Geoscientist

Nicole MacDonald, B.Sc., P.Ag.
Project Manager

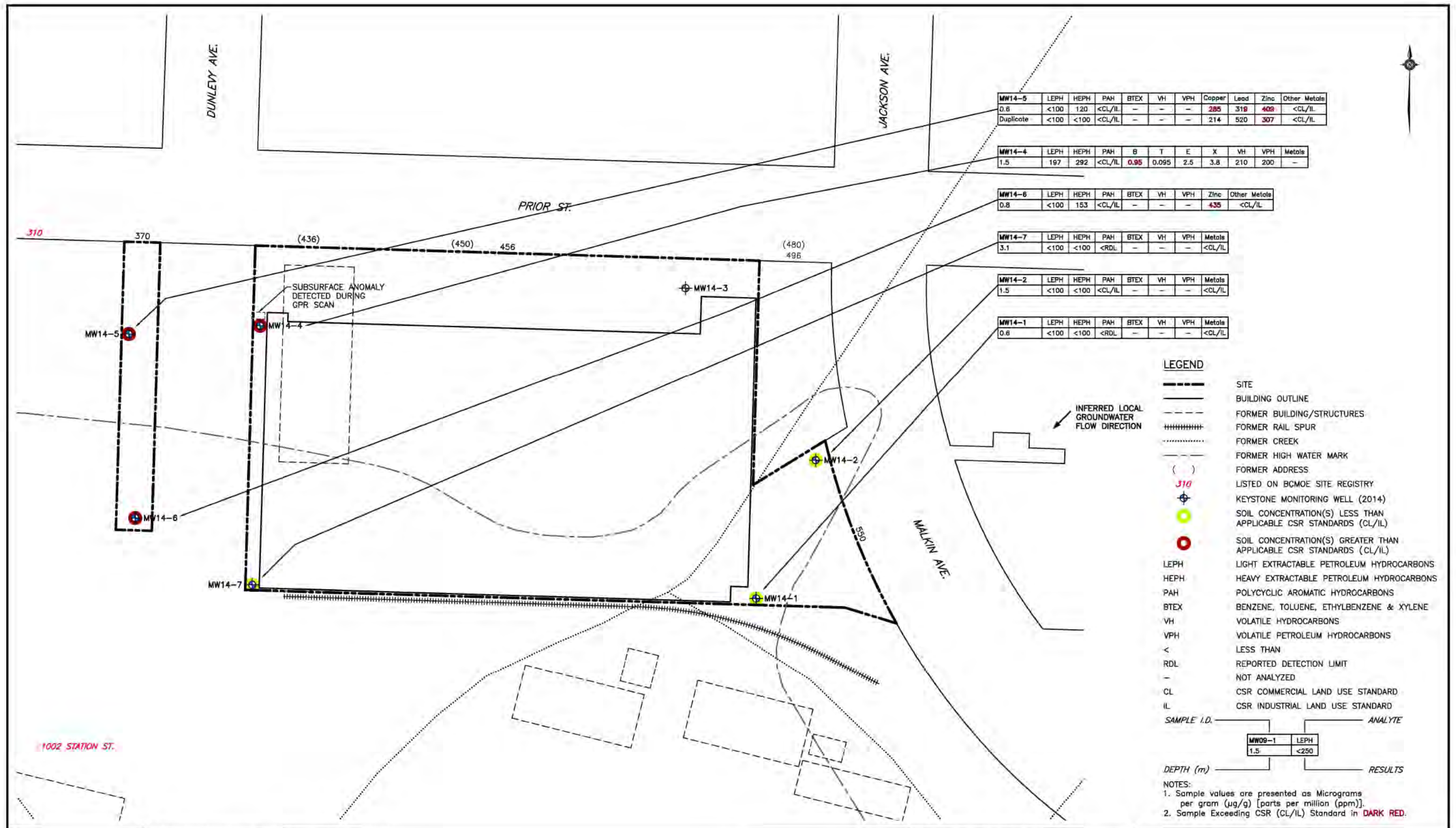
Raminder Grewal, P.Eng.
President

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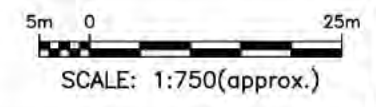
ATTACHMENTS:

- Figure
- Tables
- Well Development and Purge Forms
- Maxxam Analytics Ltd. Certificates of Analysis
- Keystone Environmental Ltd. General Terms and Conditions for Services

FIGURES



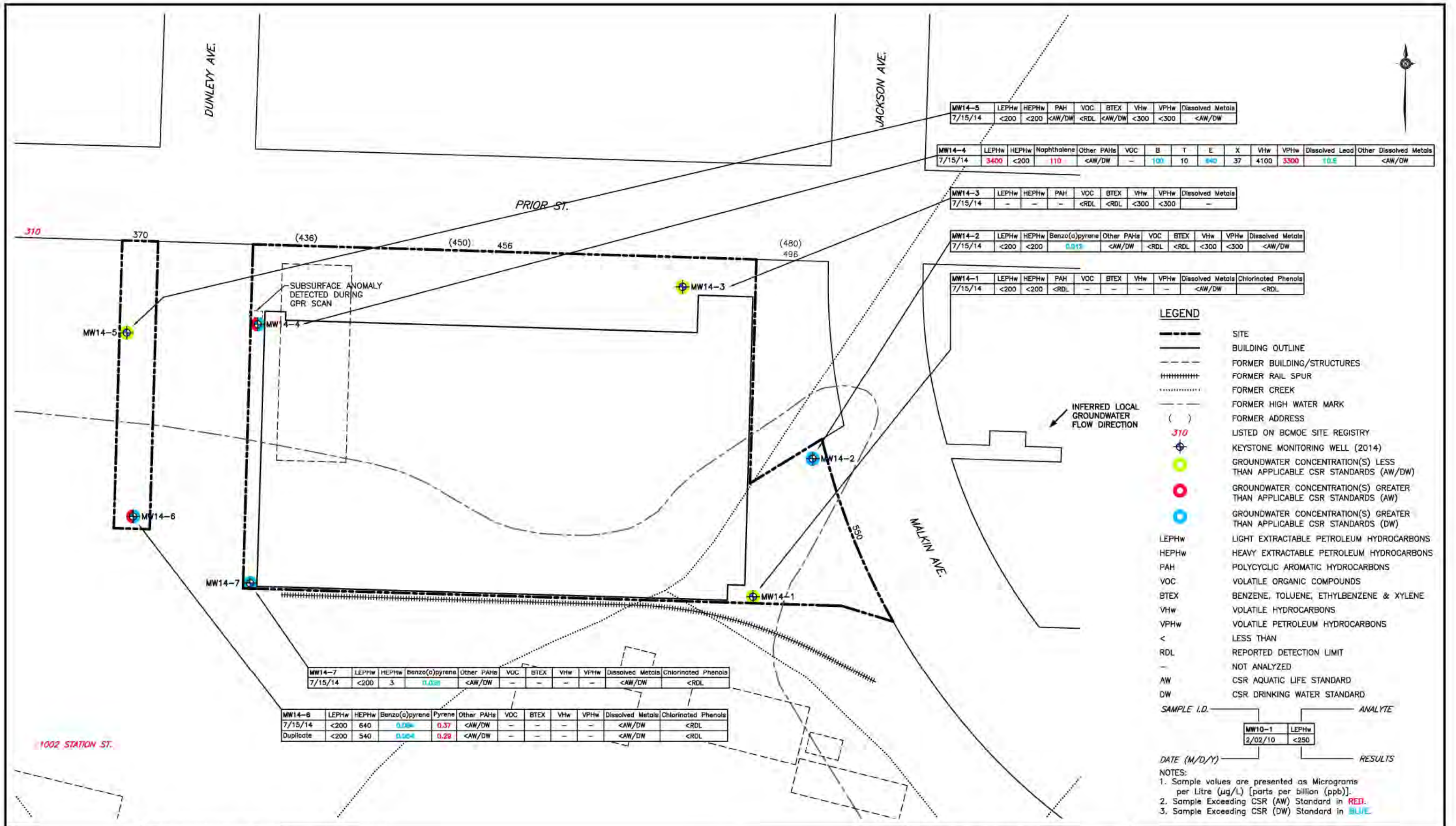
NOTE: THIS DRAWING IS FOR GENERAL INFORMATION ONLY. LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.



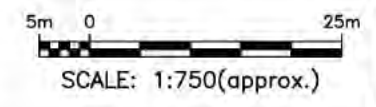
370 & 456 Prior Street
Vancouver, B C
Le Kiu Holdings Ltd.

REVISION No.	DATE	PROJECT No.
00	Aug. 2014	12108-02

Figure 1
Soil Analytical Results



NOTE: THIS DRAWING IS FOR GENERAL INFORMATION ONLY. LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.



370 & 456 Prior Street
Vancouver, B C
Le Kiu Holdings Ltd.
REVISION No. 00 DATE Aug. 2014 PROJECT No. 12108-02

Figure 2
Groundwater Analytical Results

TABLES

GLOSSARY: SOIL ANALYTICAL RESULTS

370 & 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project #: 12108

July 2014

List of Acronyms

Ag	Agricultural Land (BC CSR Schedule 7, Column III)
AL	Agricultural Land Use
BC MOE P11	British Columbia Ministry of Environment, Protocol 11
CL	Commercial Land Use
CSR	British Columbia Contaminated Sites Regulation
EPH10-19	Extractable Petroleum Hydrocarbons (carbon range 10 to 19)
EPH19-32	Extractable Petroleum Hydrocarbons (carbon range 19 to 32)
HEPH	Heavy Extractable Petroleum Hydrocarbons (corrected for PAHs)
HWR	British Columbia Hazardous Waste Regulation
IL	Industrial Land Use
LEPH	Light Extractable Petroleum Hydrocarbons (corrected for PAHs)
MS	Maximum Spread
MTBE	Methyl tert-Butyl Ether
Non-Ag	Non-agricultural land (BC CSR Schedule 7, Column II)
NS	No Standard
PAHs	Polycyclic Aromatic Hydrocarbons
PAHs HMW	Polycyclic Aromatic Hydrocarbons Heavy Molecular Weight
PAHs LMW	Polycyclic Aromatic Hydrocarbons Light Molecular Weight
PCB	Polychlorinated Biphenyls
PCDD	Polychlorinated Dibenzo-p-dioxins
PCDF	Polychlorinated Dibenzo Furans
PL	Park Land Use
RL	Residential Land Use
RPD	Relative Percent Difference
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxicity Equivalence Quotient
UCC EH	Upper Cap Concentrations for Environmental Health
UCC HH	Upper Cap Concentrations for Human Health
VH6-10	Volatile Petroleum Hydrocarbons (carbon range 6 to 10)
VOCs	Volatile Organic Compounds
VPH	Volatile Petroleum Hydrocarbons (corrected for BTEX)
WDP	Waste Disposal Prohibited (Schedule 7, Column IV)

List of Symbols

<	Concentration is less than the laboratory reported detection limit
*	Laboratory reported detection limit is greater than applicable standard/guideline
--	Sample was not analyzed for the specified constituent
a	BC CSR Matrix Numerical Soil Standards (BC CSR Schedule 5) site specific factors
	1 Intake of contaminated soil
	2 Groundwater used for drinking water
	3 Toxicity to soil invertebrates and plants
	7 Groundwater flow to surface water used by aquatic life (marine)
b	CSR standard is pH dependent
c	CSR standard for hexavalent chromium (Cr VI) used for conservativeness
d	Regional background soil quality for metals analyses from BC MOE Protocol 4
e	CSR standard for VPH/LEPH/HEPH used for comparison

List of Units

mbg	Metres below grade
µg/g	Micrograms per gram

Soil Exceedances

<u>125</u>	Exceeds CSR CL standards
125	Exceeds CSR IL standards

QA/QC Exceedances

45%	RPD exceeds 35%
>3	MS exceeds RDL

Formulas

RPD	$RPD = \frac{[Max\ Concentration - Min\ Concentration]}{[(Max\ Concentration + Min\ Concentration)/2]} * 100$
-----	---------------------------------------------------------------------------------------------------------------

**TABLE 1: SOIL ANALYTICAL RESULTS
INORGANICS**
370 & 456 Prior Street, Vancouver, BC
Le Kiu Holdings Ltd.
Project #: 12108
July 2014

CSR CL Standards	CSR IL Standards
n/s	n/s

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	MW14-1(0.6)	MW14-2(1.5)	MW14-5 (0.6)	MW14-C 11-Jul-14	RPD or MS for MW14-5 (0.6) and MW14-C	MW14-6 (0.8)	MW14-7 (3.1)
		10-Jul-14	10-Jul-14	11-Jul-14	11-Jul-14		11-Jul-14	11-Jul-14
		B459514	B459514	B459514	B459514		B459514	B459514
		KC1129	KC1136	KC1155	KC1161		KC1162	KC1171
		0.6	1.5	0.6	Duplicate of MW14-5 (0.6)		0.8	3.1
pH		7.15	7.67	6.41	6.79	--	6.37	6.73

n/s	n/s
40	40
15a	15a
400a	400a
8	8
1.5-100ba	1.5-200ba
n/s	n/s
100da	100da
300	300
100-250dba	100-250dba
300-700dba	300-2000dba
19000	19000
40	150
40	40
500	500
10	10
40	40
100000	100000
300	300
n/s	n/s
150-600ba	150-600ba

Metals									
aluminum	µg/g	9780	17600	14200	12800	10%	20700	14600	
antimony	µg/g	0.16	0.72	6.22	5.9	5%	1.56	0.14	
arsenic	µg/g	2.54	3.88	5.29	4.63	13%	4.98	1.55	
barium	µg/g	41.1	140	150	152	1%	213	59	
beryllium	µg/g	<0.40	<0.40	<0.40	<0.40	--	<0.40	<0.40	
cadmium	µg/g	0.197	0.158	1.07	0.75	35%	0.509	0.182	
calcium	µg/g	668	707	619	568	9%	790	906	
chromium (total)	µg/g	14.2	15.8	17.3	13.3	26%	20.2	16.2	
cobalt	µg/g	6.48	5.14	6.01	4.93	20%	6.3	6.95	
copper	µg/g	12	28.2	285	214	28%	32.4	19	
lead	µg/g	2.69	98.9	319	520	48%	127	2.86	
manganese	µg/g	335	252	234	213	9%	252	250	
mercury	µg/g	<0.050	0.196	0.354	0.22	0.134>0.05	0.083	<0.050	
molybdenum	µg/g	0.82	0.62	0.5	0.45	0.05<0.1	0.53	0.21	
nickel	µg/g	19.6	11.8	21.2	22.4	6%	13.1	12	
selenium	µg/g	<0.50	<0.50	<0.50	<0.50	--	<0.50	<0.50	
silver	µg/g	<0.050	0.083	0.167	0.11	0.057>0.05	3.01	0.06	
strontium	µg/g	28.3	76.8	37.3	31.1	18%	29.6	45.7	
tin	µg/g	0.8	9.51	23	14.2	47%	2.93	0.23	
vanadium	µg/g	41	43.7	43.7	39.2	11%	48.4	50.5	
zinc	µg/g	37.7	66.8	409	307	28%	435	36.5	

Soil Exceedances

125
125

Exceeds CSR CL standards
Exceeds CSR IL standards

QA/QC Exceedances

45%
>3

RPD exceeds 35%
MS exceeds RDL

**TABLE 2: SOIL ANALYTICAL RESULTS
HYDROCARBONS**
370 & 456 Prior Street, Vancouver, BC
Le Kiu Holdings Ltd.
Project #: 12108
July 2014

CSR CL Standards	CSR IL Standards
n/s	n/s

0.04a	0.04a
7a	7a
50	50
2.5a	2.5a
20a	20a

200e	200e
200	200
2000	2000
5000	5000

n/s	n/s
n/s	n/s
10	10
10	10
10	10
n/s	n/s
n/s	n/s
10	10
n/s	n/s
10	10
n/s	n/s
n/s	n/s
10	10
n/s	n/s
50	50
50	50
100	100
n/s	n/s
n/s	n/s
n/s	n/s

SAMPLE ID DATE SAMPLED LAB CERTIFICATE LAB SAMPLE ID SAMPLE DEPTH (mbg) SOIL DESCRIPTION	Units	MW14-1(0.6) 10-Jul-14 B459514 KC1129 0.6	MW14-2(1.5) 10-Jul-14 B459514 KC1136 1.5	MW14-4 (1.5) 10-Jul-14 B459514 KC1149 1.5	MW14-5 (0.6) 11-Jul-14 B459514 KC1155 0.6	MW14-C 11-Jul-14 B459514 KC1161 Duplicate of MW14-5 (0.6)	RPD or MS for MW14-5 (0.6) and MW14-C	MW14-6 (0.8) 11-Jul-14 B459514 KC1162 0.8	MW14-7 (3.1) 11-Jul-14 B459514 KC1171 3.1
pH		7.15	7.67	--	6.41	6.79	--	6.37	6.73

Monocyclic Aromatic Hydrocarbons									
benzene	µg/g	--	--	0.95	--	--	--	--	--
ethylbenzene	µg/g	--	--	2.5	--	--	--	--	--
styrene	µg/g	--	--	<0.030	--	--	--	--	--
toluene	µg/g	--	--	0.095	--	--	--	--	--
xylenes	µg/g	--	--	3.8	--	--	--	--	--

Petroleum Hydrocarbons									
VH6-10	µg/g	--	--	210	--	--	--	--	--
VPHs	µg/g	--	--	200	--	--	--	--	--
LEPHs	µg/g	<100	<100	197	<100	<100	--	<100	<100
HEPHs	µg/g	<100	<100	292	120	<100	20<100	153	<100

Polycyclic Aromatic Hydrocarbons									
acenaphthene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050
anthracene	µg/g	<0.050	<0.050	0.051	0.053	<0.050	0.003<0.05	0.11	<0.050
benzo[a]anthracene	µg/g	<0.050	0.11	0.086	0.16	0.099	0.061>0.05	0.1	<0.050
benzo[a]pyrene	µg/g	<0.050	0.11	0.088	0.17	0.099	0.071>0.05	0.087	<0.050
benzo[b]fluoranthene	µg/g	<0.050	0.093	0.081	0.15	0.096	0.054>0.05	0.081	<0.050
benzo[b+k]fluoranthene	µg/g	<0.050	0.16	0.14	0.25	0.16	0.09>0.05	0.14	<0.050
benzo[g,h,i]perylene	µg/g	<0.050	0.068	0.065	0.12	0.1	0.02<0.05	0.069	<0.050
benzo[k]fluoranthene	µg/g	<0.050	0.054	<0.050	0.078	0.053	0.025<0.05	<0.050	<0.050
chrysene	µg/g	<0.050	0.13	0.11	0.2	0.14	0.06>0.05	0.14	<0.050
dibenz[a,h]anthracene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	<0.050	<0.050
fluoranthene	µg/g	<0.050	0.25	0.26	0.36	0.21	0.15>0.05	0.24	<0.050
fluorene	µg/g	<0.050	<0.050	<0.050	<0.050	<0.050	--	0.74	<0.050
indeno[1,2,3-cd]pyrene	µg/g	<0.050	0.056	0.053	0.098	0.068	0.03<0.05	<0.050	<0.050
methylnaphthalene, 2-	µg/g	<0.050	0.18	2.3	0.37	0.26	35%	2	<0.050
naphthalene	µg/g	<0.050	0.14	1.3	0.64	0.66	3%	1.3	<0.050
phenanthrene	µg/g	<0.050	0.13	0.19	0.18	0.082	0.098>0.05	0.54	<0.050
pyrene	µg/g	<0.050	0.25	0.25	0.36	0.22	0.14>0.05	0.23	<0.050
Total HMW-PAHs	µg/g	<0.050	1.2	1.1	1.8	1.2	40%	1	<0.050
Total LMW-PAHs	µg/g	<0.050	0.44	3.9	1.3	1	26%	5.4	<0.050
Total PAHs	µg/g	<0.050	1.6	4.9	3	2.2	31%	6.4	<0.050

Soil Exceedances

125
125

Exceeds CSR CL standards
Exceeds CSR IL standards

QA/QC Exceedances

45%
>3

RPD exceeds 35%
MS exceeds RDL

GLOSSARY: GROUNDWATER ANALYTICAL RESULTS

370 & 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project #: 12108

July 2014

List of Acronyms

ABE	Alberta Environment
AWFW	Aquatic Life (freshwater)
AWM	Aquatic Life (marine)
BC MOE P11	British Columbia Ministry of Environment, Protocol 11
CCME	Canadian Council of the Ministers of the Environment
CSR	British Columbia Contaminated Sites Regulation
DW	Drinking Water
EPHw10-19	Extractable Petroleum Hydrocarbons (carbon range 10 to 19)
EPHw19-32	Extractable Petroleum Hydrocarbons (carbon range 19 to 32)
GVS&DD	Greater Vancouver Sewerage and Drainage District
HEPHw	Heavy Extractable Petroleum Hydrocarbons (corrected for PAHs)
HWR	British Columbia Hazardous Waste Regulation
IW	Irrigation Water
LEPHw	Light Extractable Petroleum Hydrocarbons (corrected for PAHs)
LW	Livestock Water
MS	Maximum Spread
MTBE	Methyl tert-Butyl Ether
MV	Metro Vancouver
NS	No Standard
PAHs	Polycyclic Aromatic Hydrocarbons
PAHs HMW	Polycyclic Aromatic Hydrocarbons Heavy Molecular Weight
PAHs LMW	Polycyclic Aromatic Hydrocarbons Light Molecular Weight
PCB	Polychlorinated Biphenyls
RPD	Relative Percent Difference
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TEQ	Toxicity Equivalency
UCC EH	Upper Cap Concentrations for Environmental Health
UCC HH	Upper Cap Concentrations for Human Health
VHw6-10	Volatile Petroleum Hydrocarbons (carbon range 6 to 10)
VOCs	Volatile Organic Compounds
VPHw	Volatile Petroleum Hydrocarbons (corrected for BTEX)

List of Symbols

<	Concentration is less than the laboratory reported detection limit
*	Laboratory reported detection limit is greater than applicable standard/guideline
-	Sample was not analyzed for the specified constituent
a	CSR standard is hardness dependent
b	CSR standard varies with Chloride ion concentration.
c	CSR standard varies with pH and temperature. 10°C is assumed.
d	CSR standard varies with pH, temperature, and salinity. 10°C and 10 g/L is assumed.
e	CSR standard varies with pH, temperature and substance isomer. Consult Director for further advice.

List of Units

mbg	Metres below grade
µg/g	Micrograms per gram

Groundwater Exceedances

125	Exceeds CSR DW standards
125	Exceeds CSR AWM standards

QA/QC Exceedances

45%	RPD exceeds 20%
>3	MS exceeds RDL

Formulas

RPD	$RPD = \frac{[Max\ Concentration - Min\ Concentration]}{[(Max\ Concentration + Min\ Concentration)/2]} * 100$
-----	---------------------------------------------------------------------------------------------------------------

TABLE 3: GROUNDWATER ANALYTICAL RESULTS

INORGANICS

370 & 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project #: 12108

July 2014

CSR DW Standards	CSR AW _M Standards
n/s	n/s
n/s	n/s

9500	n/s
6	200
10	125
1000	5000
n/s	1000
n/s	n/s
5000	50000
5	1
n/s	n/s
50	150
n/s	40
1000	20
n/s	n/s
10	20
n/s	n/s
n/s	n/s
1	1
250	10000
n/s	83
n/s	n/s
10	540
n/s	n/s
n/s	15
200000	n/s
22000	n/s
n/s	3
22000	n/s
20	1000
n/s	n/s
5000	100
n/s	n/s

730	n/s
n/s	n/s

SAMPLE ID	Units	MW14-1	MW14-2	MW14-4	MW14-5	MW14-6	MW14-A	RPD or MS	MW14-7
DATE SAMPLED		15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	for	15-Jul-14
LAB CERTIFICATE		B459953	B459953	B459953	B459953	B459953	B459953	MW14-6	B459953
LAB SAMPLE ID		KC4032	KC4033	KC4035	KC4036	KC4037	KC4039	and	KC4038
TOP OF SCREEN (mbg)		1.2	1.8	0.9	1.2	1.5	Duplicate of	MW14-A	1.5
BOTTOM OF SCREEN (mbg)		2.7	3.4	2.4	2.7	3.1	MW14-6		3.1
pH (field)		7.3	6.5	6	6.2	6.3	6.3	--	5.8
hardness	mg/L	57.2	330	117	233	260	262	0.008	76.6

Dissolved Metals									
aluminum	µg/L	28.6	11.3	46.7	365	17.5	17.2	0.017	15.3
antimony	µg/L	0.74	0.59	<0.50	0.79	<0.50	<0.50	--	<0.50
arsenic	µg/L	0.3	1.19	1.65	0.76	3.78	3.72	0.016	1
barium	µg/L	12.7	90.6	48.6	53	213	221	0.037	12.9
beryllium	µg/L	<0.10	<0.10	<0.10	0.11	<0.10	<0.10	--	<0.10
bismuth	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
boron	µg/L	<50	593	77	400	93	88	5<50	<50
cadmium	µg/L	0.016	0.1	0.085	0.051	<0.010	<0.010	--	0.176
calcium	µg/L	19900	117000	35300	70000	89200	91000	0.02	23600
chromium (total)	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--	<1.0
cobalt	µg/L	1.09	4.59	15.2	17.9	10.7	9.94	0.074	9.29
copper	µg/L	1.6	0.62	0.4	2.97	0.24	0.23	0.01<0.02	1.77
iron	µg/L	5	2960	5230	1380	22800	23400	0.026	215
lead	µg/L	<0.20	<0.20	10.5	<0.20	<0.20	<0.20	--	<0.20
magnesium	µg/L	1790	8980	6910	14300	8970	8520	0.051	4280
manganese	µg/L	155	1150	1930	2160	3530	3580	0.014	943
mercury	µg/L	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	--	<0.010
molybdenum	µg/L	14.7	1.5	<1.0	<1.0	1.3	1.3	0<1	<1.0
nickel	µg/L	1.2	5.6	16.4	32.2	7.4	7.4	0.	14.1
potassium	µg/L	2490	6540	3510	5050	6140	6050	0.015	1480
selenium	µg/L	0.11	0.17	0.17	0.21	<0.10	<0.10	--	<0.10
silicon	µg/L	4270	7500	7770	10800	11100	11600	0.044	7310
silver	µg/L	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	--	<0.020
sodium	µg/L	4980	17400	12400	34200	12600	12200	0.032	5830
strontium	µg/L	77.5	983	193	318	611	591	0.033	174
thallium	µg/L	<0.050	<0.050	0.103	0.146	<0.050	<0.050	--	<0.050
tin	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0
uranium	µg/L	<0.10	0.6	<0.10	0.56	0.22	0.22	0<0.1	<0.10
vanadium	µg/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	--	<5.0
zinc	µg/L	<5.0	6.2	6.8	18	<5.0	<5.0	--	11
zirconium	µg/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	--	<0.50

Other Inorganics									
lithium	µg/L	<5.0	<5.0	<5.0	10.5	<5.0	<5.0	--	<5.0
sulphur	µg/L	<3000	11000	28700	28800	27900	29600	0.059	16500

Groundwater Exceedances

125
125

Exceeds CSR DW standards
Exceeds CSR AWM standards

QA/QC Exceedances

45%
>3

RPD exceeds 20%
MS exceeds RDL

TABLE 4: GROUNDWATER ANALYTICAL RESULTS

HYDROCARBONS

370 & 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project #: 12108

July 2014

CSR DW Standards	CSR AWM Standards
n/s	n/s
n/s	n/s

5	1000
2.4	2500
n/s	720
24	3300
300	n/s

n/s	n/s
n/s	500
15000	15000
n/s	1500

n/s	60
n/s	0.5
n/s	1
n/s	1
0.01	0.1
n/s	n/s
n/s	n/s
n/s	n/s
n/s	1
n/s	n/s
n/s	2
n/s	120
n/s	n/s
n/s	n/s
n/s	10
n/s	3
n/s	0.2
n/s	34
n/s	n/s
n/s	n/s
n/s	n/s

SAMPLE ID	Units	MW14-1	MW14-2	MW14-3	MW14-4	MW14-5	MW14-6	MW14-A	RPD or MS	MW14-7
DATE SAMPLED		15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	15-Jul-14	for	15-Jul-14
LAB CERTIFICATE		B459953	B459953	B459953	B459953	B459953	B459953	B459953	MW14-6	B459953
LAB SAMPLE ID		KC4032	KC4033	KC4034	KC4035	KC4036	KC4037	KC4039	and	KC4038
TOP OF SCREEN (mbg)		1.2	1.8	1.5	0.9	1.2	1.5	Duplicate of	MW14-A	1.5
BOTTOM OF SCREEN (mbg)		2.7	3.4	3.1	2.4	2.7	3.1	MW14-6		3.1
pH (field)		7.3	6.5	6.4	6	6.2	6.3	6.3	--	5.8
hardness	mg/L	57.2	330	--	117	233	260	262	0.008	76.6

Monocyclic Aromatic Hydrocarbons										
benzene	µg/L	--	<0.40	<0.40	100	<0.40	--	--	--	--
ethylbenzene	µg/L	--	<0.40	<0.40	640	0.56	--	--	--	--
styrene	µg/L	--	<0.50	<0.50	<0.40	<0.50	--	--	--	--
toluene	µg/L	--	<0.40	<0.40	10	<0.40	--	--	--	--
xylenes	µg/L	--	<0.40	<0.40	37	6.3	--	--	--	--

Petroleum Hydrocarbons										
HEPHw	µg/L	<200	<200	--	<200	<200	640	540	100<200	<200
LEPHw	µg/L	<200	<200	--	3400	<200	<200	<200	--	<200
VH6-13	µg/L	--	<300	<300	4100	<300	--	--	--	--
VPHw	µg/L	--	<300	<300	3300	<300	--	--	--	--

Polycyclic Aromatic Hydrocarbons										
acenaphthene	µg/L	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	--	<0.050
acridine	µg/L	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	--	<0.050
anthracene	µg/L	<0.010	<0.010	--	<0.010	<0.010	0.16	0.14	0.133	0.018
benzo[a]anthracene	µg/L	<0.010	0.011	--	<0.010	<0.010	0.11	0.073	0.404	0.031
benzo[a]pyrene	µg/L	<0.0090	0.012	--	<0.0090	<0.0090	0.084	0.054	0.435	0.026
benzo[b]fluoranthene	µg/L	<0.050	<0.050	--	<0.050	<0.050	<0.11	0.077	0.033<0.11	<0.050
benzo[g,h,i]perylene	µg/L	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	--	<0.050
benzo[k]fluoranthene	µg/L	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	--	<0.050
chrysene	µg/L	<0.050	<0.050	--	<0.050	<0.050	0.16	0.12	0.04<0.05	<0.050
dibenz[a,h]anthracene	µg/L	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	--	<0.050
fluoranthene	µg/L	<0.020	0.027	--	<0.020	<0.020	0.36	0.3	0.182	0.088
fluorene	µg/L	<0.050	<0.050	--	0.13	<0.050	0.62	0.62	0.	<0.050
indeno[1,2,3-cd]pyrene	µg/L	<0.050	<0.050	--	<0.050	<0.050	<0.050	<0.050	--	<0.050
methylnaphthalene, 2-	µg/L	<0.10	<0.10	--	92	0.42	1.6	1.6	0.	<0.10
naphthalene	µg/L	<0.10	<0.10	--	110	1.3	2.7	2.8	0.036	<0.10
phenanthrene	µg/L	<0.050	<0.050	--	0.078	<0.050	0.76	0.72	0.054	0.12
pyrene	µg/L	<0.020	0.026	--	<0.020	<0.020	0.37	0.29	0.242	0.087
quinoline	µg/L	<0.24	<0.24	--	<0.24	<0.24	<0.24	<0.24	--	<0.24
Total HMW-PAHs	µg/L	<0.050	0.076	--	<0.050	<0.050	1.1	0.91	0.189	0.23
Total LMW-PAHs	µg/L	<0.24	<0.24	--	200	1.8	6.9	7.1	0.029	<0.24
Total PAHs	µg/L	<0.24	<0.24	--	200	1.8	8	8	0.	0.36

Groundwater Exceedances

125
125

Exceeds CSR DW standards
Exceeds CSR AWM standards

QA/QC Exceedances

45%
>3

RPD exceeds 20%
MS exceeds RDL

TABLE 5: GROUNDWATER ANALYTICAL RESULTS

VOCS

370 & 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project #: 12108

July 2014

CSR DW Standards	CSR AWM Standards
n/s	n/s
n/s	n/s

16	n/s
100	n/s
51	n/s
5	130
46	n/s
100	20
950	n/s
100	n/s
0.34	n/s
370	n/s
7300	n/s
3700	n/s
5	1000
14	n/s
370	n/s
730	n/s
50	980
9.9	n/s
6.7	n/s
6.7	n/s
26	n/s
3.4	n/s
30	1100
10000	n/s
12	n/s
5	200
11000	n/s
2	n/s

730	n/s
3	420
n/s	1500
1	260
30	120

6.1	n/s
22000	n/s
2900	n/s

Groundwater Exceedances

125
125

Exceeds CSR DW standards
Exceeds CSR AWM standards

QA/QC Exceedances

45%
>3

RPD exceeds 20%
MS exceeds RDL

SAMPLE ID	Units	MW14-2	MW14-3	MW14-5
DATE SAMPLED		15-Jul-14	15-Jul-14	15-Jul-14
LAB CERTIFICATE		B459953	B459953	B459953
LAB SAMPLE ID		KC4033	KC4034	KC4036
TOP OF SCREEN (mbg)		1.8	1.5	1.2
BOTTOM OF SCREEN (mbg)		3.4	3.1	2.7
pH (field)		6.5	6.4	6.2
hardness	mg/L	330	--	233

Halogenated Aliphatics				
bromodichloromethane	µg/L	<1.0	<1.0	<1.0
bromoform	µg/L	<1.0	<1.0	<1.0
bromomethane	µg/L	<1.0	<1.0	<1.0
carbon tetrachloride	µg/L	<0.50	<0.50	<0.50
chloroethane	µg/L	<1.0	<1.0	<1.0
chloroform	µg/L	<1.0	<1.0	<1.0
chloromethane	µg/L	<1.0	<1.0	<1.0
dibromochloromethane	µg/L	<1.0	<1.0	<1.0
dibromoethane, 1,2-	µg/L	<0.20	<0.20	<0.20
dibromomethane	µg/L	<0.90	<0.90	<0.90
dichlorodifluoromethane	µg/L	<2.0	<2.0	<2.0
dichloroethane, 1,1-	µg/L	<0.50	<0.50	<0.50
dichloroethane, 1,2-	µg/L	<0.50	<0.50	<0.50
dichloroethene, 1,1-	µg/L	<0.50	<0.50	<0.50
dichloroethene, 1,2- (cis)	µg/L	<1.0	<1.0	<1.0
dichloroethene, 1,2- (trans)	µg/L	<1.0	<1.0	<1.0
dichloromethane	µg/L	<2.0	<2.0	<2.0
dichloropropane, 1,2-	µg/L	<0.50	<0.50	<0.50
dichloropropene, 1,3- (cis)	µg/L	<1.0	<1.0	<1.0
dichloropropene, 1,3- (trans)	µg/L	<1.0	<1.0	<1.0
tetrachloroethane, 1,1,1,2-	µg/L	<0.50	<0.50	<0.50
tetrachloroethane, 1,1,2,2-	µg/L	<0.50	<0.50	<0.50
tetrachloroethene	µg/L	<0.50	<0.50	<0.50
trichloroethane, 1,1,1-	µg/L	<0.50	<0.50	<0.50
trichloroethane, 1,1,2-	µg/L	<0.50	<0.50	<0.50
trichloroethene	µg/L	<0.50	<0.50	<0.50
trichlorofluoromethane	µg/L	<4.0	<4.0	<4.0
vinyl chloride	µg/L	<0.50	<0.50	<0.50

Halogenated Aromatics				
bromobenzene	µg/L	<2.0	<2.0	<2.0
dichlorobenzene, 1,2-	µg/L	<0.50	<0.50	<0.50
dichlorobenzene, 1,3-	µg/L	<0.50	<0.50	<0.50
dichlorobenzene, 1,4-	µg/L	<0.50	<0.50	<0.50
monochlorobenzene	µg/L	<0.50	<0.50	<0.50

Non-Halogenated Aliphatics				
butadiene, 1,3-	µg/L	<5.0	<5.0	<5.0
butanone, 2-	µg/L	<10	<10	<10
methyl-2-pentanone, 4-	µg/L	<10	<10	<10

TABLE 6: GROUNDWATER ANALYTICAL RESULTS

PHENOLICS

370 & 456 Prior Street, Vancouver, BC

Le Kiu Holdings Ltd.

Project #: 12108

July 2014

CSR DW Standards	CSR AW _M Standards
n/s	n/s
n/s	n/s

SAMPLE ID	Units	MW14-1	MW14-6	MW14-A	RPD or MS	MW14-7
DATE SAMPLED		15-Jul-14	15-Jul-14	15-Jul-14		15-Jul-14
LAB CERTIFICATE		B459953	B459953	B459953	MW14-6	B459953
LAB SAMPLE ID		KC4032	KC4037	KC4039	and	KC4038
TOP OF SCREEN (mbg)		1.2	1.5	Duplicate of	MW14-A	1.5
BOTTOM OF SCREEN (mbg)		2.7	3.1	MW14-6		3.1
pH (field)		7.3	6.3	6.3	--	5.8
hardness	mg/L	57.2	260	262	0.008	76.6

n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
0.3	2.5
n/s	n/s
0.1	8.5
30	1
n/s	n/s
n/s	n/s
n/s	n/s
1	2
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
n/s	n/s
2	1

Chlorinated Phenols						
dichlorophenol, 2,3-	µg/L	<0.10	<0.10	<0.10	--	<0.10
dichlorophenol, 2,6-	µg/L	<0.10	<0.10	<0.10	--	<0.10
dichlorophenol, 3,4-	µg/L	<0.10	<0.10	<0.10	--	<0.10
dichlorophenol, 3,5-	µg/L	<0.10	<0.10	<0.10	--	<0.10
dichlorophenols (total)	µg/L	<0.10	<0.10	<0.10	--	<0.10
monochlorophenol, 3-	µg/L	<0.10	<0.10	<0.10	--	<0.10
monochlorophenols (total)	µg/L	<0.10	<0.10	<0.10	--	<0.10
pentachlorophenol	µg/L	<0.63	<0.63	<0.63	--	<0.63
tetrachlorophenol, 2,3,4,5-	µg/L	<0.10	<0.10	<0.10	--	<0.10
tetrachlorophenol, 2,3,4,6-	µg/L	<0.10	<0.10	<0.10	--	<0.10
tetrachlorophenol, 2,3,5,6-	µg/L	<0.10	<0.10	<0.10	--	<0.10
tetrachlorophenols (total)	µg/L	<0.10	<0.10	<0.10	--	<0.10
trichlorophenol, 2,3,4-	µg/L	<0.10	<0.10	<0.10	--	<0.10
trichlorophenol, 2,3,5-	µg/L	<0.10	<0.10	<0.10	--	<0.10
trichlorophenol, 2,3,6-	µg/L	<0.10	<0.10	<0.10	--	<0.10
trichlorophenol, 2,4,5-	µg/L	<0.10	<0.10	<0.10	--	<0.10
trichlorophenol, 2,4,6-	µg/L	<0.10	<0.10	<0.10	--	<0.10
trichlorophenol, 3,4,5-	µg/L	<0.10	<0.10	<0.10	--	<0.10
trichlorophenols (total)	µg/L	<0.10	<0.10	<0.10	--	<0.10

Groundwater Exceedances

125
125

Exceeds CSR DW standards
Exceeds CSR AWM standards

QA/QC Exceedances

45%
>3

RPD exceeds 20%
MS exceeds RDL

WELL DEVELOPMENT AND PURGE FORMS

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW14-1 Project #/Name: 12138-02
 Location: 456 Prins St, Vancouver Client: Lt Kwei
 Sampler: J. Jensen

WELL INFORMATION

Well Cover Type: Flush Stick-up Lock No-lock Well Casing: 24 inch (61 mm) Diameter or other:
 Screened Interval (m): 0-91 Well Head Vapour Reading: 2.2 ppm or %LEL RKI Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: July 14/14 Weather: Sunny + 22°C
 Depth to Bottom of Well from TOC (X) 264 metres
 Depth to Water from Top of Casing (Y) 6.65 metres
 Depth to Product (if applicable) 2 metres
 Length of Water Column (X-Y) 1.99 metres
 Volume of Water in Well = (X - Y) * 2 400 litres
 Minimum Volume = 6 * well volume 2400 litres
 Total Volume Developed 24 litres
 Development Method: Water Pump Surge Block (Time: 1) Dailer Other (specify): _____
 Turbidity Ratings: Before Dev. After Dev.

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/14 Weather: Sunny Hot + 24°C
 Minimum Volume = 3 * well volume 12 litres
 Purge/Sample Method: Water Pump Peristaltic pump or a Bailor Other (specify): _____
 Turbidity Ratings: Purging Sampling

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Flow rate sampling only (mBTCC)	Rate (mL/min)
0		155	20.1	44		9:16	0.667	2.15 L/min
1	7.4	155	20.1	123		9:21	0.70	"
2	7.2	156	20.9	122		9:26	0.74	"
3		155	21.2	117		9:30	0.57	"

Odour: Yes No Description: _____ Colour (initial) Clear (stable)
 Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES: Field Parameters and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV), and if applicable: Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: July 15/14 Analytical Laboratory: Prochem
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/VPH BTEX/VPH/MI/BE EPH
 EPH corrected (i.e. LEPH/NEPH) PAHs Glycols
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW14-2
 Location: 756 Pin St Vancouver BC
 Sampler: Belmont

Project #/Name: 12108-02
 Client: Le Kin

WELL INFORMATION

Well Cover Type: Flush / Stick-up / metal mesh
 Lock: Lock / No-lock
 Well Casing: 2-inch (51 mm) Diameter or other:
 Screened Interval (m): 6-11' Well Head Vapour Reading: 0.3 ppm or %LEL AKI Eagle MiniRae Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: July 14/14 Weather: Sunny + 25°C
 Depth to Bottom of Well from TOC (X): 3.38 metres
 Depth to Water from Top of Casing (Y): 2.26 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y): -1.02 metres
 Volume of Water in Well = (X - Y) * 2: 2.54 litres
 Minimum Volume = 8 * well volume: 12.00 litres
 Total Volume Developed: 14.54 litres
 Development Method: Water Pump
 Surge Block (time: 5 min)
 Bailer
 Other (specify) _____
 Turbidity Ratings: *
 Before Dev: _____
 After Dev: _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 16/14 Weather: Sunny + 22°C
 Minimum Volume = 3 * well volume _____ litres
 Purge/Sample Method: Water Pump
 Perforated Quill Jet: _____
 Bailer
 Other (specify) _____
 Turbidity Ratings: *
 Purging: _____
 Sampling: _____

Well volume Purged (L)	pH	Conductivity (µS/cm or mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/l)	Time	DTW (mBTC)	Rate (mL/min)
0						10:04	2.998	0.1
1	6.6	709	16.4	120		10:13	2.977	0.1
2	6.6	716	16.1	87		10:22	2.625	0.1
3	6.5	711	16.1	97		10:25	2.473	0.1

Odour: Yes / No Description: _____
 Colour (initial): 1.1 (stable)
 Recovery: Slow / Moderate / Fast

NOTES: Field Parameter and Stability Guidance. pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%);
 Oxidation-Reduction Potential (±10mV); and if applicable Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque
 **Recovery Estimate - Slow: greater than 10 cm drawdown; Moderate: slightly lower than 10 cm drawdown; Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: July 15/14 Analytical Laboratory: 12108-02
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/VPH
 EPH extracted (i.e. LEPM/HEPH)
 Non-Chlorinated Phenol
 Dissolved Metals
 Pesticides
 BTEX/VPHTBE
 PAHs
 Chlorinated Phenols
 Field Filter & Preserved?
 pH
 EPH
 Glycols
 PCBs
 Total Metals
 Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW14-3 Project Name: 12108-02
 Location: 450 Fair St Vancouver BC Client: Le Kul
 Sample: Flowline

WELL INFORMATION

Well Cover Type: Flush Stack up Lock No-lock Well Casing: 2-inch (51 mm) Diameter or other
 Screened Interval (m): 5'-10' Well Head Vapour Reading: 5.9 ppm or %LEL RNI Eagle MinRap Other _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: July 14/14 Weather: Sunny 12°C
 Depth to Bottom of Well from TOC (X) 2.99 metres
 Depth to Water from Top of Casing (Y) 1.82 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 1.16 metres
 Volume of Water in Well = (X · Y) · 2 2.36 litres
 Minimum Volume = 5 · well volume 11.9 litres
 Total Volume Developed 14 litres
 Development Method: Water Pump Surge Block (l/min: _____) Bailer Other (specify): _____
 Turbidity Ratings: Below Dev _____ Above Dev _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/14 Weather: Sunny + 26°C
 Minimum Volume = 3 · well volume _____ litres
 Purge/Sample Method: Water Pump Peristaltic Pump (l/min: _____) Bailer Other (specify): _____
 Turbidity Ratings: Purging _____ Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm or mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTOC) <small>(Low flow sampling only)</small>	Rate (mL/min)
0		<u>628</u>	<u>17</u>			<u>10:59</u>	<u>1.835</u>	<u>0.15</u>
1	<u>6.5</u>	<u>672</u>	<u>17.2</u>	<u>121</u>		<u>11:04</u>	<u>2.015</u>	
2	<u>6.3</u>	<u>651</u>	<u>17.0</u>	<u>128</u>		<u>11:10</u>	<u>2.120</u>	
3	<u>6.4</u>	<u>661</u>	<u>17.4</u>	<u>132</u>		<u>11:15</u>	<u>2.18</u>	

Odour: Yes No Description: _____ Colour (initial): Clear (stable)
 Stain: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of I to 10, where I is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 on drawdown Moderate: slightly lower than 10 on drawdown Fast: within 10 on drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: July 15/14 Analytical Laboratory: Murray
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/VPH BTEX/VPH/MTE EPH
 EPH corrected (i.e. LEPH/HEPH) PAHs Glycols
 Non-Chlorinated Phenols Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:

(1) 7.4 liter day
 (2) 3.8 liter day
 (3) 1.8

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.2

GENERAL INFORMATION

Monitoring Well ID: MW104 Project #/Name: 12128-02
 Location: 456 Prince George Vancouver Client: Le Kul
 Sampler: Rebecca

WELL INFORMATION

Well Cover Type: Flush / Stack-up / muonlock Lock: / No-lock Well Casing: 2-inch (51 mm) / Diameter or other: _____

Screened Interval (m): 7' - 8' Well Head Vapour Reading: 51.2 ppm or %LEL AKI Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: 5 July 2014 Weather: Sunny + 28°C

Depth to Bottom of Well from TOC (X) 2.55 metres
 Depth to Water from Top of Casing (Y) 1.54 metres
 Depth to Product if applicable _____ metres
 Length of Water Column (X - Y) 0.81 metres
 Volume of Water in Well = (X - Y) * 2 1.62 litres
 Minimum Volume = 6 * well volume 9.72 litres
 Total Volume Developed 11.34 litres

Development Method: Water Pump / Surge Block (lens) / Bailer / Other (specify) _____

Turbidity Ratings: * Before Dev. _____ / After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/14 Weather: Sunny

Minimum Volume = 3 * well volume _____ litres

Purge/Sample Method: Water Pump / Peristaltic Pump / Bailer / Other (specify) _____

Turbidity Ratings: * Purging _____ / Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm or µmS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Low flow sampling only		
						Time	DTW (mBTCC)	Flow (m./min.)
0						11:40	1.54	0.15 d/min
1	8.0	405	19.3	30		11:45	1.625	
2	6.0	419	17.9	46		11:50	1.644	
3	5.9	369	19.4	44		11:55	1.655	

Odour: Yes No Description: _____ Colour (initial) _____ (stable) _____
 Sheen: Yes No Description: _____ Recovery: * Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: 5 July 2014 Analytical Laboratory: 2145 HV
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____

VOC/VPH BTEX/VPH/MTBE EPH
 EPH connected (i.e. LEPH/HEPH) PAHs Organic
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservatives Requirements Correspond to Laboratory Standards

COMMENTS: _____

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW115
 Location: 456 Pine Street Vancouver
 Sampler: Matt

Project #/Name: 12108-07
 Client: Lehigh

WELL INFORMATION

Well Cover Type: Flush Stick-up Lock No-lock Well Casing: 2 inch (51 mm) Diameter or other:
 Screened Interval (m): 4' - 9' Well Head Vapour Reading: 1.9 ppm or %LEL HKI Eagle MiniRae Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: July 14/14 Weather: Sunny 25°C
 Depth to Bottom of Well from TOC (X): 2.71 metres
 Depth to Water from Top of Casing (Y): 1.14 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y): 1.57 metres
 Volume of Water in Well = (X - Y) * 2 = 3.14 litres
 Minimum Volume = 6 * well volume = 19 litres
 Total Volume Developed 19 litres
 Development Method: Wellbore Pump Surge Block (time _____) Bailor Other (specify) _____
 Turbidity Ratings: Before Dev. _____ After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: _____ Weather: _____
 Minimum Volume = 3 * well volume _____ litres
 Purge/Sample Method: Wellbore Pump Peristaltic tubing set Bailor Other (specify) _____
 Turbidity Ratings: Purging _____ Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm or (mS/cm))	Temperature (°C)	ORP (mV)	DO (mg/L)	Low flow purging (m³)		
						Time	DTW (mBTOG)	Rate (mL/min)
0			19.0			12:28	1.15	2.15 L/min
1	6.3	710	19.0	66		12:32	1.25	
2	6.3	480	20.4	54		12:39	1.295	
3	6.1	522	21.1	51		12:43	1.285	
4	6.2	549	21.3	50		12:46	1.305	

Odour: Yes No Description: septic-like smell Colour (initial) _____ (stable) _____
 Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: _____
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/VPH BTEX/VPH/MTBE EPH
 EPH corrected (± 8 L-HPH/EPH) PAHs Glycols
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other: _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements correspond to Laboratory Standards

COMMENTS: _____

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW 11.6
 Location: 45a Pine Street
 Sampler: MW 1

Project #/Name: 17128-03
 Client: Labco

WELL INFORMATION

Well Cover Type: Flush Shek-up in above grade Lock No-lock Well Casing: 2-inch (51 mm) Diameter or other:
 Screened Interval (m): 3' 10" Well Head Vapour Reading: 0.7 ppm or %LEL PNI Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: July 14/14 Weather: Sunny 25C
 Depth to Bottom of Well from TOC (X) 3.01 metres
 Depth to Water from Top of Casing (Y) 1.91 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) 1.09 metres
 Volume of Water in Well = (X · Y) · π · 2 2.7 litres
 Minimum Volume = 6 · well volume 13 litres
 Total Volume Developed 6 litres
 Development Method: Surge Block
 Water Pump Turbidity Ratings: Before Dev: _____ After Dev: _____
 Surge Block (time): _____
 Bailor
 Other (Specify): _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/14 Weather: Cloudy Hot
 Minimum Volume = 3 · well volume _____ litres
 Purge Sample Method: Water Pump Peristaltic pump Bailor Other (Specify): _____
 Turbidity Ratings: Purging: _____ Sampling: _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (µS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Low flow sampling only		
						Time	OTW (mB/OC) Rate (mL/min)	
0							1.94	1.86/min
1	7.0	638	19.0	45		1:16	2.125	
2	6.4	635	19.1	47		1:21	2.190	
3	6.3	641	19.2	46		1:26	2.225	

Colour (initial) Grey (stable) _____
 Recovery ** Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: July 15/14 Analytical Laboratory: July 15/14
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/PH BTEX/VPH/MTBE EPH
 EPH corrected i.e. LEPH/HEPH PAHs Glycols
 Non-Chlorinated Phand Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other: _____

Duplicate Sample ID: MW 14 - A Duplicate Sample Parameters: 1111/PAH/2122/2222/2222/2222/2222

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:
 ① 2.2
 ② 2.2
 ③ 2.2



GENERAL INFORMATION

Monitoring Well ID: MW14-7 Project #/Name: 12108-02
 Location: 456 Peira Sta. Dawson Client: Le Kwi
 Sampler: B. Leman

WELL INFORMATION

Well Cover Type: Flush Stick-up m above grade Lock No-lock Well Casing: 2 inch (51 mm) Diameter or other:
 Screen Interval (in): 5' - 10' Well Head Vapour Reading: 1.3 ppm or % L L RKI Eagle Air Rae Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: July 17/04 Weather: Sunny + 25°C
 Depth to Gallon of Well from TOC (X): 3.00 metres
 Depth to Water from Top of Casing (Y): 2.12 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X-Y): 0.88 metres
 Volume of Water In Well = (X · Y) · π: 11.00 litres
 Minimum Volume = 8 · well volume: _____ litres
 Total Volume Developed: 5 litres

Development Method: Water Pump Turbidity Ratings*
 Surge Block (time: _____) Bore Dev _____
 Bailer Air Dev _____
 Other (specify): _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/04 Weather: Sunny 19.1 + 26°C
 Minimum Volume = 3 · well volume: _____ litres
 Purge-Stripte Method: Water Pump
 Peristaltic Pump
 Bailer
 Other (specify): _____

Turbidity Ratings*
 Purging: _____
 Sampling: _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTC)	Rate (mL/min)
0						1:58	2.115	15.0
1	6.2	237	16.3	62		1:55	2.224 2.295	
2	5.8	188	16.1	104		2:05	2.116	
3	5.8	197	16.0	118		2:06	2.71	

Odour: Yes No Description: _____ Colour (initial): clear (stable): cloudy
 Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES: Field Parameters and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV), and if applicable Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque
 **Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: _____
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/MPH BTEX/VPH/MTBE EPH
 EPH extracted (i.e. LEPAHEPH) PAHs Glycols
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Field Filler & Preservative? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:

① 3.1
 ② 1.6
 ③ 1.1
 ④ 2.08

MAXXAM ANALYTICS LTD. CERTIFICATES OF ANALYSIS



Your Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC

Attention: Nicole MacDonald

KEYSTONE ENVIRONMENTAL LTD
 SUITE 320
 4400 DOMINION STREET
 BURNABY, BC
 CANADA V5G 4G3

Your C.O.C. #: K015044, K015043, K015045, K015046

Report Date: 2014/07/22
 Report #: R1607379
 Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B459514

Received: 2014/07/14, 16:50

Sample Matrix: Soil
 # Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/MTBE Soil LH, VH, F1 SIM/MS	1	2014/07/15	2014/07/15	BBY8-SOP-00010	EPA SW846 8260C
Elements by ICPMS (total)	6	2014/07/16	2014/07/16	BBY7SOP-00001	EPA 6020a
Moisture	7	N/A	2014/07/16	BBY8SOP-00017	Ont MOE -E 3139
PAH in Soil by GC/MS (SIM)	7	2014/07/15	2014/07/18	BBY8SOP-00022	EPA 8270D
Total LMW, HMW, Total PAH Calc	4	N/A	2014/07/18	BBY WI-00033	BC MOE Lab Method
Total LMW, HMW, Total PAH Calc	3	N/A	2014/07/21	BBY WI-00033	BC MOE Lab Method
pH (2:1 DI Water Extract)	6	2014/07/17	2014/07/17	BBY6SOP-00028	BC Env Lab Manual
EPH less PAH in Soil By GC/FID	4	N/A	2014/07/18	BBY WI-00033	BC MOE Lab Method
EPH less PAH in Soil By GC/FID	3	N/A	2014/07/21	BBY WI-00033	BC MOE Lab Method
BC Hydrocarbons in Soil by GC/FID	4	2014/07/15	2014/07/17	BBY8SOP-00029	BC Env Lab Manual
BC Hydrocarbons in Soil by GC/FID	3	2014/07/15	2014/07/18	BBY8SOP-00029	BC Env Lab Manual
Volatile HC-BTEX	1	N/A	2014/07/16	BBY WI-00033	BC MOE Lab Method

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key  Jennifer Villocero
 22 Jul 2014 14:44:42 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
 Amandeep Nagra, Account Specialist
 Email: ANagra@maxxam.ca
 Phone# (604)639-2602

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Maxxam Job #: B459514
 Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

PHYSICAL TESTING (SOIL)

Maxxam ID		KC1129	KC1136	KC1149	KC1155	KC1161	KC1162		
Sampling Date		2014/07/10	2014/07/10	2014/07/10	2014/07/11	2014/07/11	2014/07/11		
COC Number		K015044	K015044	K015043	K015045	K015045	K015045		
	Units	MW14-1(0.6)	MW14-2(1.5)	MW14-4 (1.5)	MW14-5 (0.6)	MW14-C	MW14-6 (0.8)	RDL	QC Batch
Physical Properties									
Moisture	%	14	17	34	16	10	16	0.30	7564206
RDL = Reportable Detection Limit									

Maxxam ID		KC1171		
Sampling Date		2014/07/11		
COC Number		K015046		
	Units	MW14-7 (3.1)	RDL	QC Batch
Physical Properties				
Moisture	%	19	0.30	7564206
RDL = Reportable Detection Limit				

Maxxam Job #: B459514
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
Sampler Initials: BL

BCCSR BTEX/VPH BY HS IN SOIL (SOIL)

Maxxam ID		KC1149		
Sampling Date		2014/07/10		
COC Number		K015043		
	Units	MW14-4 (1.5)	RDL	QC Batch
Volatiles				
VPH (VH6 to 10 - BTEX)	mg/kg	200	10	7563317
Benzene	mg/kg	0.95	0.0050	7564900
Toluene	mg/kg	0.095	0.020	7564900
Ethylbenzene	mg/kg	2.5	0.010	7564900
m & p-Xylene	mg/kg	3.6	0.040	7564900
o-Xylene	mg/kg	0.18	0.040	7564900
Styrene	mg/kg	<0.030	0.030	7564900
Xylenes (Total)	mg/kg	3.8	0.040	7564900
VH C6-C10	mg/kg	210	10	7564900
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	97		7564900
4-Bromofluorobenzene (sur.)	%	99		7564900
D10-ETHYLBENZENE (sur.)	%	95		7564900
D4-1,2-Dichloroethane (sur.)	%	102		7564900
RDL = Reportable Detection Limit				

Maxxam Job #: B459514
 Report Date: 2014/07/22

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

LEPH & HEPH FOR CSR IN SOIL (SOIL)

Maxxam ID		KC1129	KC1136	KC1149	KC1155		KC1161		
Sampling Date		2014/07/10	2014/07/10	2014/07/10	2014/07/11		2014/07/11		
COC Number		K015044	K015044	K015043	K015045		K015045		
	Units	MW14-1(0.6)	MW14-2(1.5)	MW14-4 (1.5)	MW14-5 (0.6)	QC Batch	MW14-C	RDL	QC Batch
Polycyclic Aromatics									
Naphthalene	ug/g	<0.050	0.14	1.3	0.64	7568186	0.66	0.050	7569033
2-Methylnaphthalene	ug/g	<0.050	0.18	2.3	0.37	7568186	0.26	0.050	7569033
Acenaphthylene	ug/g	<0.050	<0.050	<0.050	<0.050	7568186	<0.050	0.050	7569033
Acenaphthene	ug/g	<0.050	<0.050	<0.050	<0.050	7568186	<0.050	0.050	7569033
Fluorene	ug/g	<0.050	<0.050	<0.050	<0.050	7568186	<0.050	0.050	7569033
Phenanthrene	ug/g	<0.050	0.13	0.19	0.18	7568186	0.082	0.050	7569033
Anthracene	ug/g	<0.050	<0.050	0.051	0.053	7568186	<0.050	0.050	7569033
Fluoranthene	ug/g	<0.050	0.25	0.26	0.36	7568186	0.21	0.050	7569033
Pyrene	ug/g	<0.050	0.25	0.25	0.36	7568186	0.22	0.050	7569033
Benzo(a)anthracene	ug/g	<0.050	0.11	0.086	0.16	7568186	0.099	0.050	7569033
Chrysene	ug/g	<0.050	0.13	0.11	0.20	7568186	0.14	0.050	7569033
Benzo(b&j)fluoranthene	ug/g	<0.050	0.16	0.14	0.25	7568186	0.16	0.050	7569033
Benzo(b)fluoranthene	ug/g	<0.050	0.093	0.081	0.15	7568186	0.096	0.050	7569033
Benzo(k)fluoranthene	ug/g	<0.050	0.054	<0.050	0.078	7568186	0.053	0.050	7569033
Benzo(a)pyrene	ug/g	<0.050	0.11	0.088	0.17	7568186	0.099	0.050	7569033
Indeno(1,2,3-cd)pyrene	ug/g	<0.050	0.056	0.053	0.098	7568186	0.068	0.050	7569033
Dibenz(a,h)anthracene	ug/g	<0.050	<0.050	<0.050	<0.050	7568186	<0.050	0.050	7569033
Benzo(g,h,i)perylene	ug/g	<0.050	0.068	0.065	0.12	7568186	0.10	0.050	7569033
Low Molecular Weight PAH`s	ug/g	<0.050	0.44	3.9	1.3	7562989	1.0	0.050	7562989
High Molecular Weight PAH`s	ug/g	<0.050	1.2	1.1	1.8	7562989	1.2	0.050	7562989
Total PAH	ug/g	<0.050	1.6	4.9	3.0	7562989	2.2	0.050	7562989
Calculated Parameters									
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	197	<100	7563284	<100	100	7563284
HEPH (C19-C32 less PAH)	mg/kg	<100	<100	292	120	7563284	<100	100	7563284
Hydrocarbons									
EPH (C10-C19)	mg/kg	<100	<100	199	<100	7568171	<100	100	7569030
EPH (C19-C32)	mg/kg	<100	<100	292	121	7568171	<100	100	7569030
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	102	91	90	87	7568186	78		7569033
D8-ACENAPHTHYLENE (sur.)	%	85	82	82	81	7568186	75		7569033
D8-NAPHTHALENE (sur.)	%	85	81	81	78	7568186	79		7569033
TERPHENYL-D14 (sur.)	%	102	97	98	93	7568186	84		7569033
O-TERPHENYL (sur.)	%	104	99	98	98	7568171	96		7569030
RDL = Reportable Detection Limit									

Maxxam Job #: B459514
 Report Date: 2014/07/22

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

LEPH & HEPH FOR CSR IN SOIL (SOIL)

Maxxam ID		KC1162	KC1171		
Sampling Date		2014/07/11	2014/07/11		
COC Number		K015045	K015046		
	Units	MW14-6 (0.8)	MW14-7 (3.1)	RDL	QC Batch
Polycyclic Aromatics					
Naphthalene	ug/g	1.3	<0.050	0.050	7569033
2-Methylnaphthalene	ug/g	2.0	<0.050	0.050	7569033
Acenaphthylene	ug/g	<0.050	<0.050	0.050	7569033
Acenaphthene	ug/g	0.82	<0.050	0.050	7569033
Fluorene	ug/g	0.74	<0.050	0.050	7569033
Phenanthrene	ug/g	0.54	<0.050	0.050	7569033
Anthracene	ug/g	0.11	<0.050	0.050	7569033
Fluoranthene	ug/g	0.24	<0.050	0.050	7569033
Pyrene	ug/g	0.23	<0.050	0.050	7569033
Benzo(a)anthracene	ug/g	0.10	<0.050	0.050	7569033
Chrysene	ug/g	0.14	<0.050	0.050	7569033
Benzo(b&j)fluoranthene	ug/g	0.14	<0.050	0.050	7569033
Benzo(b)fluoranthene	ug/g	0.081	<0.050	0.050	7569033
Benzo(k)fluoranthene	ug/g	<0.050	<0.050	0.050	7569033
Benzo(a)pyrene	ug/g	0.087	<0.050	0.050	7569033
Indeno(1,2,3-cd)pyrene	ug/g	<0.050	<0.050	0.050	7569033
Dibenz(a,h)anthracene	ug/g	<0.050	<0.050	0.050	7569033
Benzo(g,h,i)perylene	ug/g	0.069	<0.050	0.050	7569033
Low Molecular Weight PAH's	ug/g	5.4	<0.050	0.050	7562989
High Molecular Weight PAH's	ug/g	1.0	<0.050	0.050	7562989
Total PAH	ug/g	6.4	<0.050	0.050	7562989
Calculated Parameters					
LEPH (C10-C19 less PAH)	mg/kg	<100	<100	100	7563284
HEPH (C19-C32 less PAH)	mg/kg	153	<100	100	7563284
Hydrocarbons					
EPH (C10-C19)	mg/kg	<100	<100	100	7569030
EPH (C19-C32)	mg/kg	154	<100	100	7569030
Surrogate Recovery (%)					
D10-ANTHRACENE (sur.)	%	75	78		7569033
D8-ACENAPHTHYLENE (sur.)	%	77	77		7569033
D8-NAPHTHALENE (sur.)	%	79	80		7569033
TERPHENYL-D14 (sur.)	%	78	87		7569033
O-TERPHENYL (sur.)	%	95	96		7569030
RDL = Reportable Detection Limit					

Maxxam Job #: B459514
 Report Date: 2014/07/22

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		KC1129	KC1136	KC1136	KC1155	KC1161	KC1162		
Sampling Date		2014/07/10	2014/07/10	2014/07/10	2014/07/11	2014/07/11	2014/07/11		
COC Number		K015044	K015044	K015044	K015045	K015045	K015045		
	Units	MW14-1(0.6)	MW14-2(1.5)	MW14-2(1.5) Lab-Dup	MW14-5 (0.6)	MW14-C	MW14-6 (0.8)	RDL	QC Batch

Physical Properties

Soluble (2:1) pH	pH	7.15	7.67	7.72	6.41	6.79	6.37	N/A	7565686
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Total Metals by ICPMS

Total Aluminum (Al)	mg/kg	9780	17600	17700	14200	12800	20700	100	7565684
Total Antimony (Sb)	mg/kg	0.16	0.72	0.76	6.22	5.90	1.56	0.10	7565684
Total Arsenic (As)	mg/kg	2.54	3.88	3.56	5.29	4.63	4.98	0.50	7565684
Total Barium (Ba)	mg/kg	41.1	140	143	150	152	213	0.10	7565684
Total Beryllium (Be)	mg/kg	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	0.40	7565684
Total Cadmium (Cd)	mg/kg	0.197	0.158	0.138	1.07	0.750	0.509	0.050	7565684
Total Chromium (Cr)	mg/kg	14.2	15.8	15.7	17.3	13.3	20.2	1.0	7565684
Total Cobalt (Co)	mg/kg	6.48	5.14	5.49	6.01	4.93	6.30	0.30	7565684
Total Copper (Cu)	mg/kg	12.0	28.2	27.8	285	214	32.4	0.50	7565684
Total Lead (Pb)	mg/kg	2.69	98.9	108	319	520	127	0.10	7565684
Total Manganese (Mn)	mg/kg	335	252	265	234	213	252	0.20	7565684
Total Mercury (Hg)	mg/kg	<0.050	0.196	0.233	0.354	0.220	0.083	0.050	7565684
Total Molybdenum (Mo)	mg/kg	0.82	0.62	0.63	0.50	0.45	0.53	0.10	7565684
Total Nickel (Ni)	mg/kg	19.6	11.8	11.3	21.2	22.4	13.1	0.80	7565684
Total Selenium (Se)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7565684
Total Silver (Ag)	mg/kg	<0.050	0.083	0.100	0.167	0.110	3.01	0.050	7565684
Total Strontium (Sr)	mg/kg	28.3	76.8	79.3	37.3	31.1	29.6	0.10	7565684
Total Tin (Sn)	mg/kg	0.80	9.51	8.15	23.0	14.2	2.93	0.10	7565684
Total Titanium (Ti)	mg/kg	668	707	707	619	568	790	1.0	7565684
Total Vanadium (V)	mg/kg	41.0	43.7	43.3	43.7	39.2	48.4	2.0	7565684
Total Zinc (Zn)	mg/kg	37.7	66.8	66.2	409	307	435	1.0	7565684

RDL = Reportable Detection Limit

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

Maxxam Job #: B459514
 Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

CSR/CCME METALS IN SOIL (SOIL)

Maxxam ID		KC1171		
Sampling Date		2014/07/11		
COC Number		K015046		
	Units	MW14-7 (3.1)	RDL	QC Batch
Physical Properties				
Soluble (2:1) pH	pH	6.73	N/A	7565686
Total Metals by ICPMS				
Total Aluminum (Al)	mg/kg	14600	100	7565684
Total Antimony (Sb)	mg/kg	0.14	0.10	7565684
Total Arsenic (As)	mg/kg	1.55	0.50	7565684
Total Barium (Ba)	mg/kg	59.0	0.10	7565684
Total Beryllium (Be)	mg/kg	<0.40	0.40	7565684
Total Cadmium (Cd)	mg/kg	0.182	0.050	7565684
Total Chromium (Cr)	mg/kg	16.2	1.0	7565684
Total Cobalt (Co)	mg/kg	6.95	0.30	7565684
Total Copper (Cu)	mg/kg	19.0	0.50	7565684
Total Lead (Pb)	mg/kg	2.86	0.10	7565684
Total Manganese (Mn)	mg/kg	250	0.20	7565684
Total Mercury (Hg)	mg/kg	<0.050	0.050	7565684
Total Molybdenum (Mo)	mg/kg	0.21	0.10	7565684
Total Nickel (Ni)	mg/kg	12.0	0.80	7565684
Total Selenium (Se)	mg/kg	<0.50	0.50	7565684
Total Silver (Ag)	mg/kg	0.060	0.050	7565684
Total Strontium (Sr)	mg/kg	45.7	0.10	7565684
Total Tin (Sn)	mg/kg	0.23	0.10	7565684
Total Titanium (Ti)	mg/kg	906	1.0	7565684
Total Vanadium (V)	mg/kg	50.5	2.0	7565684
Total Zinc (Zn)	mg/kg	36.5	1.0	7565684
RDL = Reportable Detection Limit N/A = Not Applicable				



Maxxam Job #: B459514
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
Sampler Initials: BL

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	8.7°C
Package 2	8.0°C

Results relate only to the items tested.



Maxxam Job #: B459514
 Report Date: 2014/07/22

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
7564900	1,4-Difluorobenzene (sur.)	2014/07/15	96	70 - 130	99	70 - 130	98	%				
7564900	4-Bromofluorobenzene (sur.)	2014/07/15	100	70 - 130	100	70 - 130	98	%				
7564900	D10-ETHYLBENZENE (sur.)	2014/07/15	99	50 - 130	91	50 - 130	91	%				
7564900	D4-1,2-Dichloroethane (sur.)	2014/07/15	107	70 - 130	102	70 - 130	103	%				
7568171	O-TERPHENYL (sur.)	2014/07/17	92	50 - 130	92	50 - 130	113	%				
7568186	D10-ANTHRACENE (sur.)	2014/07/17	93	60 - 130	97	60 - 130	107	%				
7568186	D8-ACENAPHTHYLENE (sur.)	2014/07/17	89	50 - 130	89	50 - 130	95	%				
7568186	D8-NAPHTHALENE (sur.)	2014/07/17	89	50 - 130	89	50 - 130	94	%				
7568186	TERPHENYL-D14 (sur.)	2014/07/17	102	60 - 130	103	60 - 130	112	%				
7569030	O-TERPHENYL (sur.)	2014/07/18	101	50 - 130	87	50 - 130	107	%				
7569033	D10-ANTHRACENE (sur.)	2014/07/18	76	60 - 130	86	60 - 130	91	%				
7569033	D8-ACENAPHTHYLENE (sur.)	2014/07/18	69	50 - 130	81	50 - 130	88	%				
7569033	D8-NAPHTHALENE (sur.)	2014/07/18	68	50 - 130	84	50 - 130	90	%				
7569033	TERPHENYL-D14 (sur.)	2014/07/18	79	60 - 130	87	60 - 130	92	%				
7564206	Moisture	2014/07/16					<0.30	%				
7564900	Benzene	2014/07/15	99	60 - 140	109	60 - 140	<0.0050	mg/kg				
7564900	Ethylbenzene	2014/07/15	101	60 - 140	110	60 - 140	<0.010	mg/kg				
7564900	m & p-Xylene	2014/07/15	94	60 - 140	105	60 - 140	<0.040	mg/kg				
7564900	o-Xylene	2014/07/15	94	60 - 140	104	60 - 140	<0.040	mg/kg				
7564900	Styrene	2014/07/15					<0.030	mg/kg				
7564900	Toluene	2014/07/15	95	60 - 140	104	60 - 140	<0.020	mg/kg				
7564900	VH C6-C10	2014/07/15			79	60 - 140	<10	mg/kg				
7564900	Xylenes (Total)	2014/07/15					<0.040	mg/kg				
7565684	Total Aluminum (Al)	2014/07/16					<100	mg/kg	0.5	35	103	70 - 130
7565684	Total Antimony (Sb)	2014/07/16	93	75 - 125	95	75 - 125	<0.10	mg/kg	5.5	30	96	70 - 130
7565684	Total Arsenic (As)	2014/07/16	97	75 - 125	94	75 - 125	<0.50	mg/kg	8.6	30	96	70 - 130
7565684	Total Barium (Ba)	2014/07/16	NC	75 - 125	102	75 - 125	<0.10	mg/kg	2.4	35	101	70 - 130
7565684	Total Beryllium (Be)	2014/07/16	95	75 - 125	97	75 - 125	<0.40	mg/kg	NC	30		
7565684	Total Cadmium (Cd)	2014/07/16	102	75 - 125	103	75 - 125	<0.050	mg/kg	NC	30	101	70 - 130
7565684	Total Chromium (Cr)	2014/07/16	96	75 - 125	98	75 - 125	<1.0	mg/kg	0.5	30	103	70 - 130
7565684	Total Cobalt (Co)	2014/07/16	96	75 - 125	101	75 - 125	<0.30	mg/kg	6.5	30	89	70 - 130
7565684	Total Copper (Cu)	2014/07/16	NC	75 - 125	101	75 - 125	<0.50	mg/kg	1.4	30	90	70 - 130



Maxxam Job #: B459514
 Report Date: 2014/07/22

QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
7565684	Total Lead (Pb)	2014/07/16	NC	75 - 125	105	75 - 125	<0.10	mg/kg	8.6	35	102	70 - 130
7565684	Total Manganese (Mn)	2014/07/16	NC	75 - 125	98	75 - 125	<0.20	mg/kg	5.0	30	96	70 - 130
7565684	Total Mercury (Hg)	2014/07/16	100	75 - 125	99	75 - 125	<0.050	mg/kg	NC	35	103	70 - 130
7565684	Total Molybdenum (Mo)	2014/07/16	93	75 - 125	89	75 - 125	<0.10	mg/kg	2.1	35	95	70 - 130
7565684	Total Nickel (Ni)	2014/07/16	98	75 - 125	98	75 - 125	<0.80	mg/kg	4.3	30	92	70 - 130
7565684	Total Selenium (Se)	2014/07/16	101	75 - 125	99	75 - 125	<0.50	mg/kg	NC	30		
7565684	Total Silver (Ag)	2014/07/16	100	75 - 125	101	75 - 125	<0.050	mg/kg	NC	35		
7565684	Total Strontium (Sr)	2014/07/16	NC	75 - 125	95	75 - 125	<0.10	mg/kg	3.3	35	97	70 - 130
7565684	Total Tin (Sn)	2014/07/16	NC	75 - 125	93	75 - 125	<0.10	mg/kg	15.4	35		
7565684	Total Titanium (Ti)	2014/07/16	NC	75 - 125	94	75 - 125	<1.0	mg/kg	0.07	35	106	70 - 130
7565684	Total Vanadium (V)	2014/07/16	NC	75 - 125	97	75 - 125	<2.0	mg/kg	1	30	101	70 - 130
7565684	Total Zinc (Zn)	2014/07/16	NC	75 - 125	103	75 - 125	<1.0	mg/kg	1	30	90	70 - 130
7565686	Soluble (2:1) pH	2014/07/17			100	97 - 103			0.6	20		
7568171	EPH (C10-C19)	2014/07/17	93	50 - 130	93	50 - 130	<100	mg/kg				
7568171	EPH (C19-C32)	2014/07/17	93	50 - 130	93	50 - 130	<100	mg/kg				
7568186	2-Methylnaphthalene	2014/07/17	86	50 - 130	85	50 - 130	<0.050	ug/g				
7568186	Acenaphthene	2014/07/17	87	50 - 130	86	50 - 130	<0.050	ug/g				
7568186	Acenaphthylene	2014/07/17	84	50 - 130	84	50 - 130	<0.050	ug/g				
7568186	Anthracene	2014/07/17	91	60 - 130	92	60 - 130	<0.050	ug/g				
7568186	Benzo(a)anthracene	2014/07/17	83	60 - 130	82	60 - 130	<0.050	ug/g				
7568186	Benzo(a)pyrene	2014/07/17	82	60 - 130	85	60 - 130	<0.050	ug/g				
7568186	Benzo(b&j)fluoranthene	2014/07/17	81	60 - 130	81	60 - 130	<0.050	ug/g				
7568186	Benzo(b)fluoranthene	2014/07/17					<0.050	ug/g				
7568186	Benzo(g,h,i)perylene	2014/07/17	71	60 - 130	74	60 - 130	<0.050	ug/g				
7568186	Benzo(k)fluoranthene	2014/07/17	79	60 - 130	81	60 - 130	<0.050	ug/g				
7568186	Chrysene	2014/07/17	84	60 - 130	87	60 - 130	<0.050	ug/g				
7568186	Dibenz(a,h)anthracene	2014/07/17	74	60 - 130	75	60 - 130	<0.050	ug/g				
7568186	Fluoranthene	2014/07/17	95	60 - 130	95	60 - 130	<0.050	ug/g				
7568186	Fluorene	2014/07/17	87	50 - 130	87	50 - 130	<0.050	ug/g				
7568186	Indeno(1,2,3-cd)pyrene	2014/07/17	76	60 - 130	78	60 - 130	<0.050	ug/g				
7568186	Naphthalene	2014/07/17	84	50 - 130	84	50 - 130	<0.050	ug/g				
7568186	Phenanthrene	2014/07/17	82	60 - 130	84	60 - 130	<0.050	ug/g				

Maxxam Job #: B459514
 Report Date: 2014/07/22

QUALITY ASSURANCE REPORT(CONT'D)

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
7568186	Pyrene	2014/07/17	95	60 - 130	96	60 - 130	<0.050	ug/g				
7569030	EPH (C10-C19)	2014/07/18	NC	50 - 130	83	50 - 130	<100	mg/kg				
7569030	EPH (C19-C32)	2014/07/18	NC	50 - 130	86	50 - 130	<100	mg/kg				
7569033	2-Methylnaphthalene	2014/07/18	64	50 - 130	76	50 - 130	<0.050	ug/g				
7569033	Acenaphthene	2014/07/18	72	50 - 130	76	50 - 130	<0.050	ug/g				
7569033	Acenaphthylene	2014/07/18	62	50 - 130	75	50 - 130	<0.050	ug/g				
7569033	Anthracene	2014/07/18	75	60 - 130	78	60 - 130	<0.050	ug/g				
7569033	Benzo(a)anthracene	2014/07/18	83	60 - 130	81	60 - 130	<0.050	ug/g				
7569033	Benzo(a)pyrene	2014/07/18	73	60 - 130	77	60 - 130	<0.050	ug/g				
7569033	Benzo(b&j)fluoranthene	2014/07/18	81	60 - 130	79	60 - 130	<0.050	ug/g				
7569033	Benzo(b)fluoranthene	2014/07/18					<0.050	ug/g				
7569033	Benzo(g,h,i)perylene	2014/07/18	90	60 - 130	88	60 - 130	<0.050	ug/g				
7569033	Benzo(k)fluoranthene	2014/07/18	78	60 - 130	76	60 - 130	<0.050	ug/g				
7569033	Chrysene	2014/07/18	86	60 - 130	85	60 - 130	<0.050	ug/g				
7569033	Dibenz(a,h)anthracene	2014/07/18	86	60 - 130	85	60 - 130	<0.050	ug/g				
7569033	Fluoranthene	2014/07/18	70	60 - 130	75	60 - 130	<0.050	ug/g				
7569033	Fluorene	2014/07/18	69	50 - 130	73	50 - 130	<0.050	ug/g				
7569033	Indeno(1,2,3-cd)pyrene	2014/07/18	86	60 - 130	88	60 - 130	<0.050	ug/g				
7569033	Naphthalene	2014/07/18	61	50 - 130	73	50 - 130	<0.050	ug/g				
7569033	Phenanthrene	2014/07/18	68	60 - 130	74	60 - 130	<0.050	ug/g				
7569033	Pyrene	2014/07/18	70	60 - 130	76	60 - 130	<0.050	ug/g				

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B459514
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET, VANCOUVER BC
Sampler Initials: BL

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reinert, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



CHAIN OF CUSTODY RECORD

Page: 2 of 4

Maxxam Job#: B459514

K 015043

Invoice To: Require Report? Yes No

Report To: _____

Company Name: Keystone Environmental Ltd.
 Contact Name: Nicole McDonald / Brian Lenton
 Address: #320-4400 Dominion Street
Burnaby, BC PC: V5G 4G3
 Phone / Fax#: Ph: (604) 430-0671 Fax: (604) 430-0672
 E-mail: _____

Company Name: _____
 Contact Name: _____
 Address: _____
 PC: _____
 Ph: _____ Fax: _____
 E-mail: _____

PO #: _____
 Quotation #: _____
 Project #: 12108-02
 Proj. Name: LeKui
 Location: 456 Prion Street Vancouver BC.
 Sampled By: B. Lenna

REGULATORY REQUIREMENTS SERVICE REQUESTED:

- CSR Regular Turn Around Time (TAT) (5 days for most tests)
- CCME
- BC Water Quality RUSH (Please contact the lab)
- Other 1 Day 2 Day 3 Day
- DRINKING WATER Date Required: _____

Special Instructions:
 Return Cooler Ship Sample Bottles (please specify)

ANALYSIS REQUESTED

MTBE	TEH	LEPH/NEPH	COE-PhC (Fractions 1-4 Plus BTEX)	COE-PhC (Fractions 2-4)	COE BTEX (Fraction 1 Plus BTEX)	PCB	Phenols by GC/MS	Phenols by AAAP	MOG	SWOG	Disolved Metals	Field Analyzed?	Total Metals Field Analyzed?	Nitrate	Ammonia	Chloride	Fluoride	Sulphate	Total Suspended Solids-TSS	TDS	pH	Conductivity	Alkalinity	BOD	COD	Coliform, Total & E.coli	Fecal	Asbestos	SOIL METALS	# of containers	HOLD	YES	NO		
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

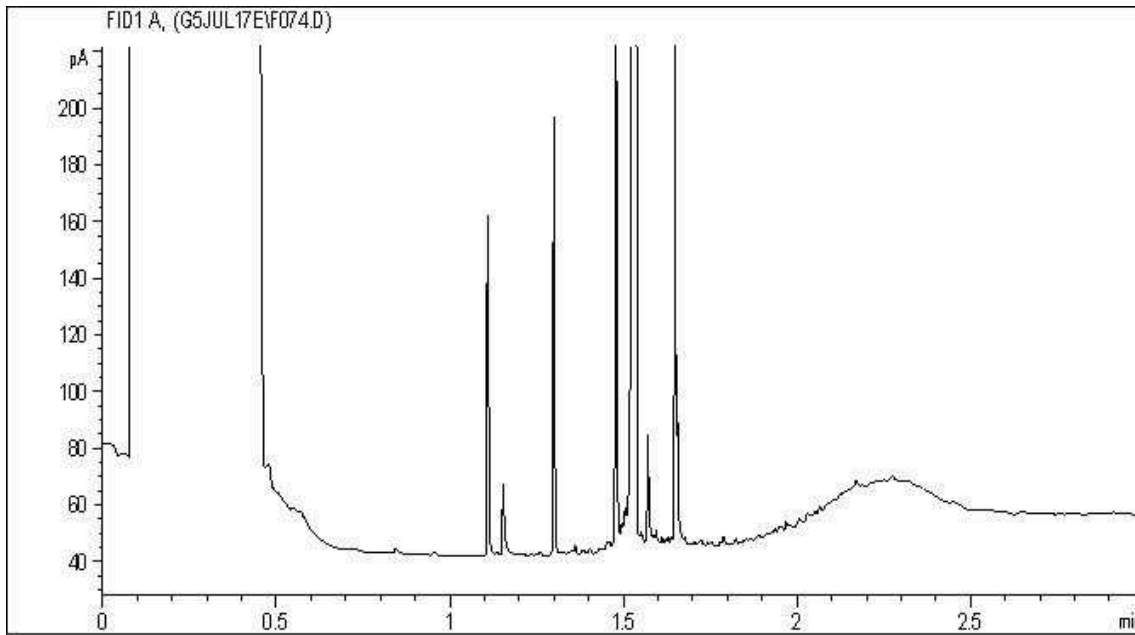
Sample Identification	Lab Identification	Sample Type	Date/Time Sampled
1 MW14-A	KC1141	soil	July 10/14
2 MW14-3 (0.8)	KC1142		
3 MW14-3 (1.5)	KC1143		
4 MW14-3 (2.3)	KC1144		
5 MW14-3 (3.1)	KC1145		
6 MW14-3 (3.8)	KC1146		
7 MW14-3 (4.6)	KC1147		
8 MW14-4 (0.8)	KC1148		
9 MW14-4 (1.5)	KC1149		
10 MW14-4 (2.3)	KC1150		
11 MW14-4 (3.1)	KC1151		
12 MW14-4 (3.8)	KC1152		



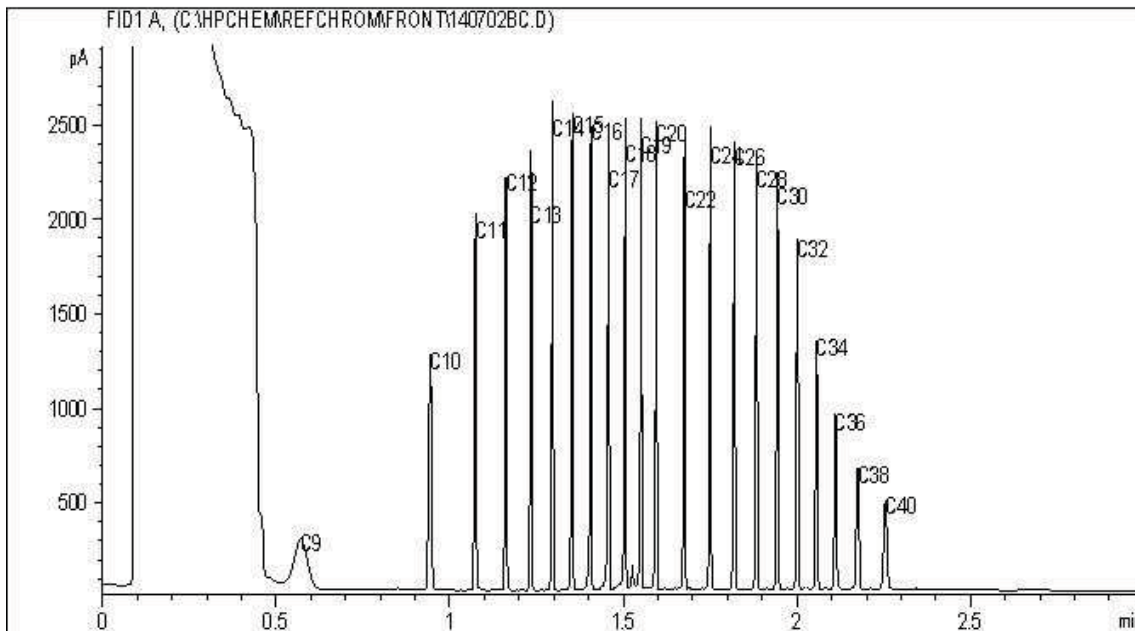
*Relinquished by:	Date (YY/MM/DD):	Time:	Received by:	Date (YY/MM/DD):	Time:	Time Sensitive	Temperature on Receipt (°C)	Custody Seal Intact on Cooler?
<u>Brian Lenton</u>	<u>14/07/14</u>	<u>4:50 p.m.</u>	<u>REBECCA BANZON</u>	<u>20/07/14</u>	<u>16:50</u>	<input type="checkbox"/>	<u>9.7, 10 / 7.8, 9</u>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

IT IS THE RESPONSIBILITY OF THE RELINQUISHED TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS. White: Maxxam Yellow: Client

BC Hydrocarbons in Soil by GC/FID Chromatogram



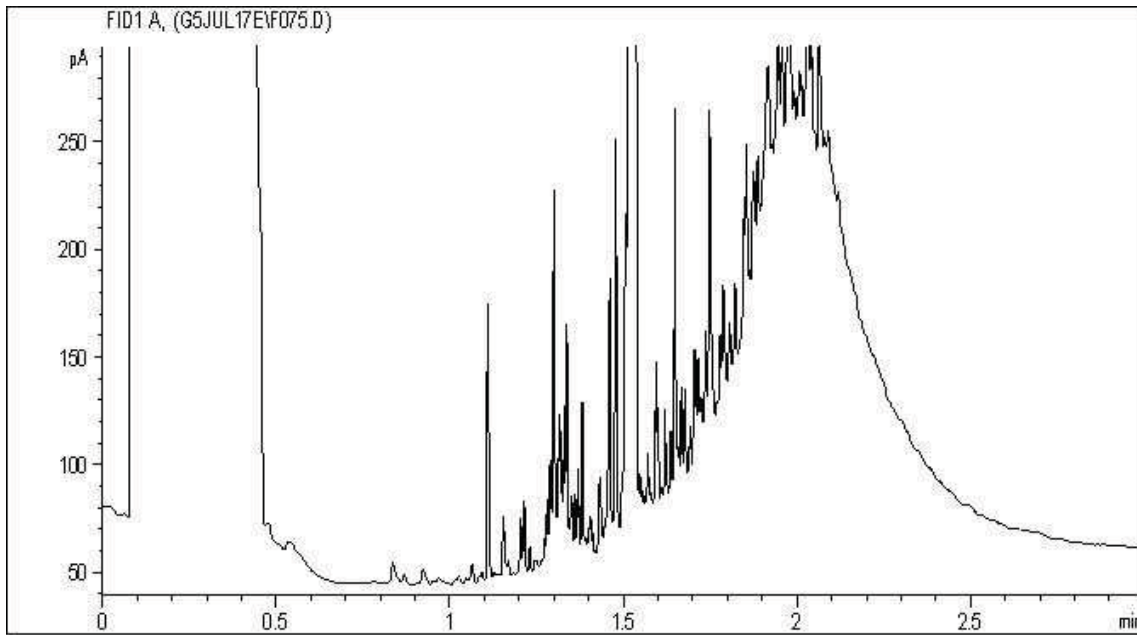
Carbon Range Distribution - Reference Chromatogram



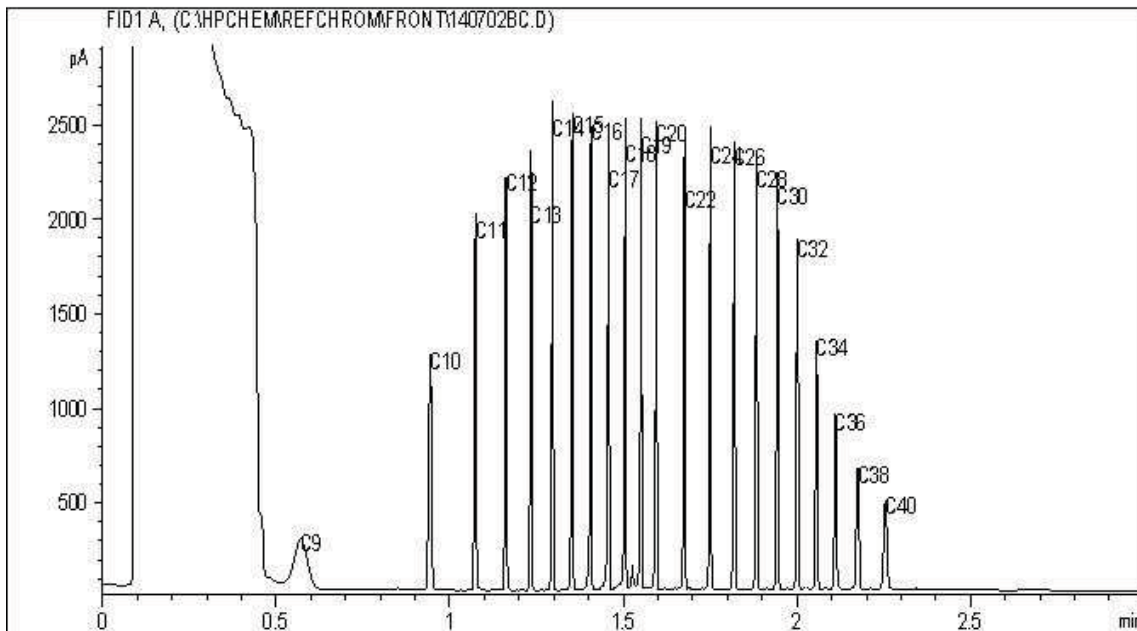
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BC Hydrocarbons in Soil by GC/FID Chromatogram



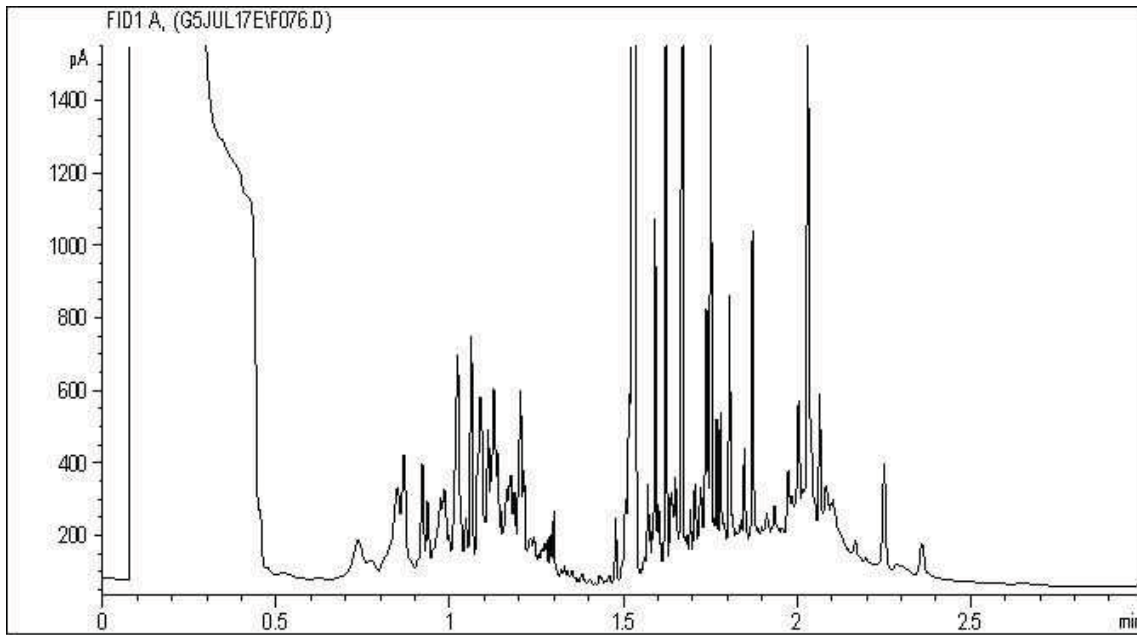
Carbon Range Distribution - Reference Chromatogram



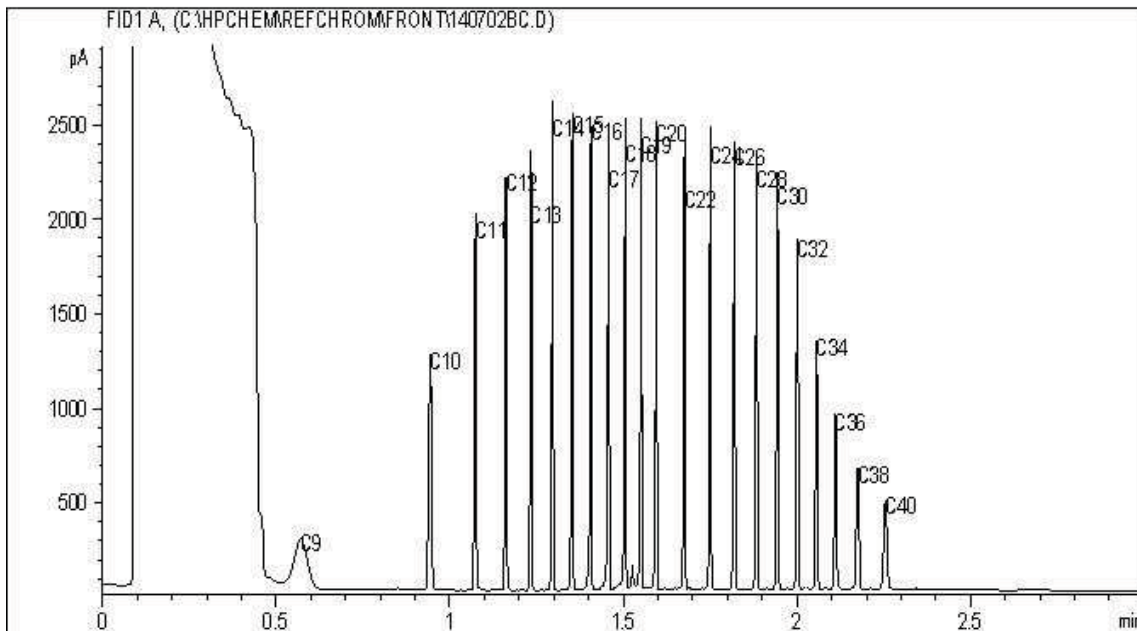
TYPICAL PRODUCT CARBON NUMBER RANGES

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BC Hydrocarbons in Soil by GC/FID Chromatogram



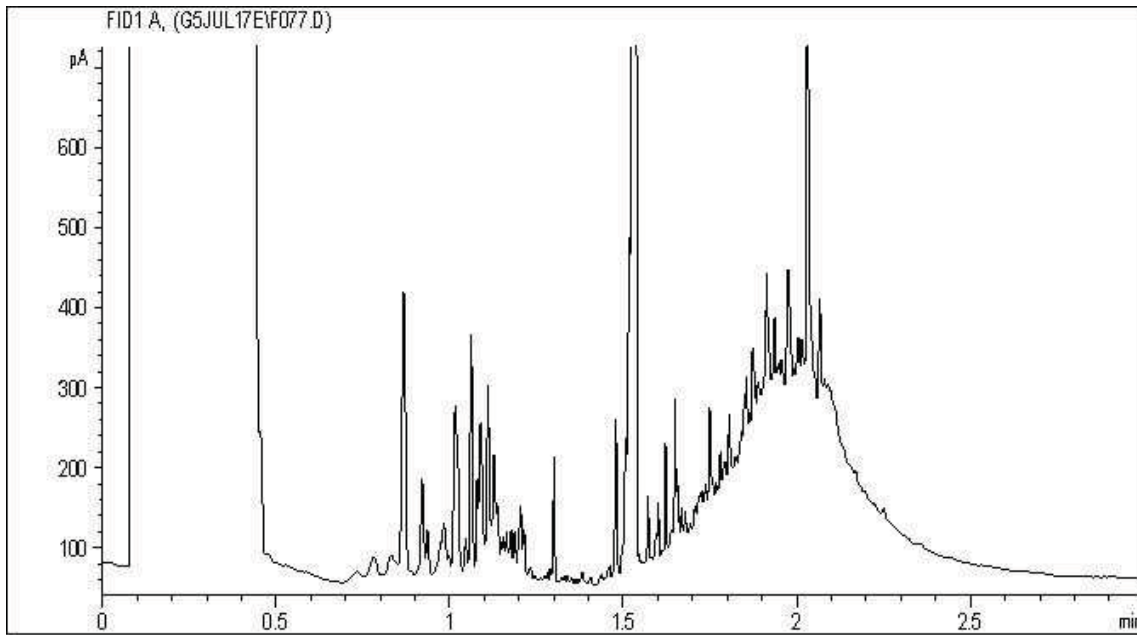
Carbon Range Distribution - Reference Chromatogram



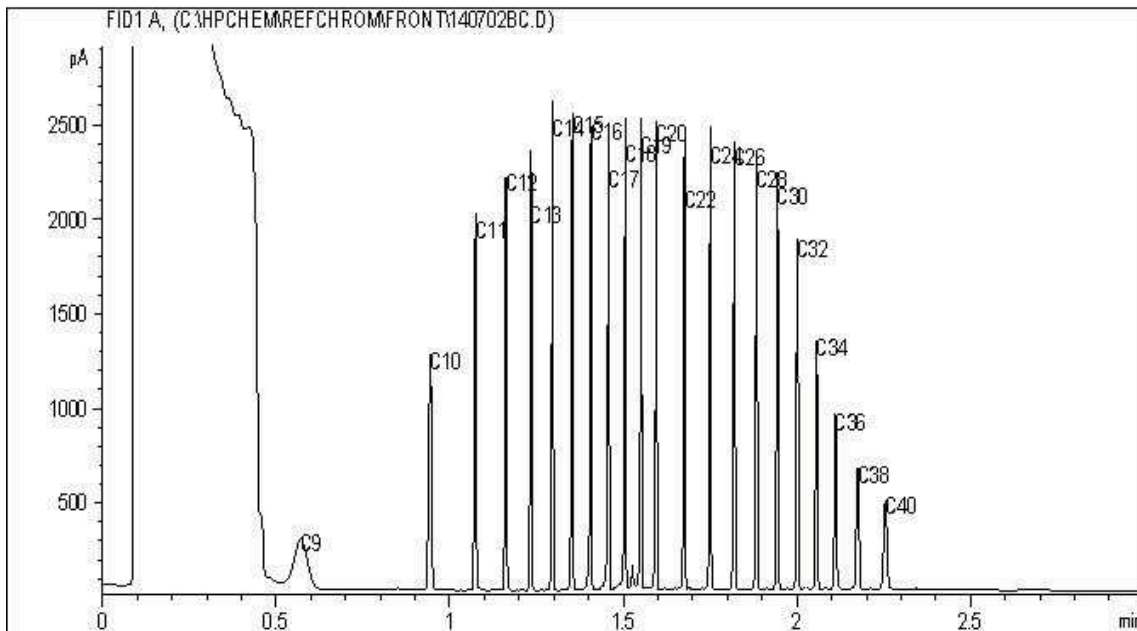
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BC Hydrocarbons in Soil by GC/FID Chromatogram



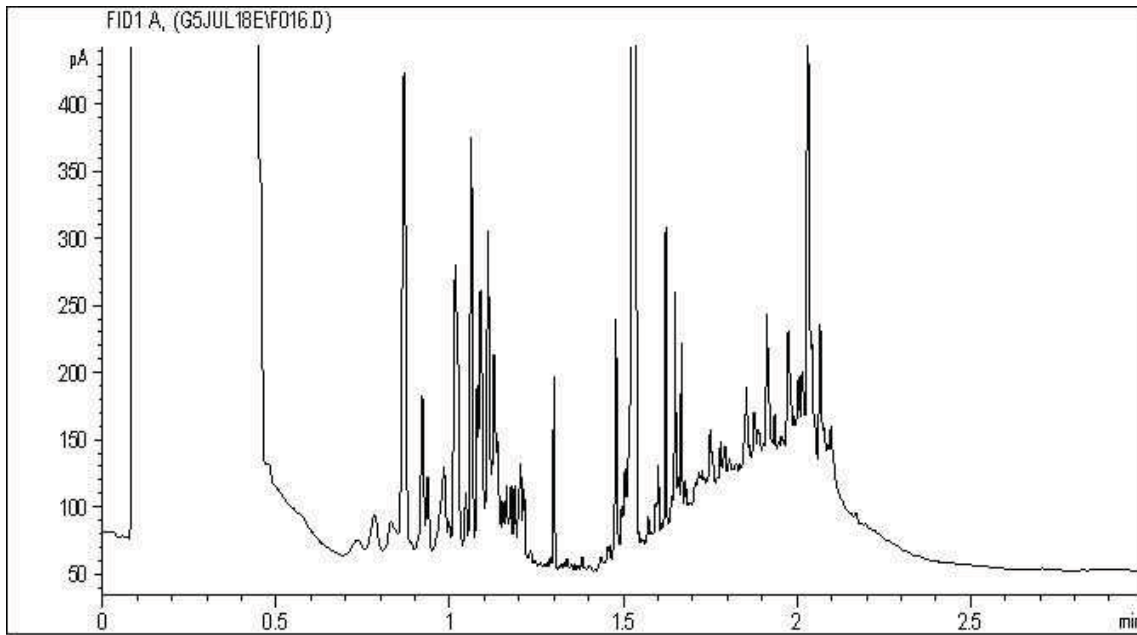
Carbon Range Distribution - Reference Chromatogram



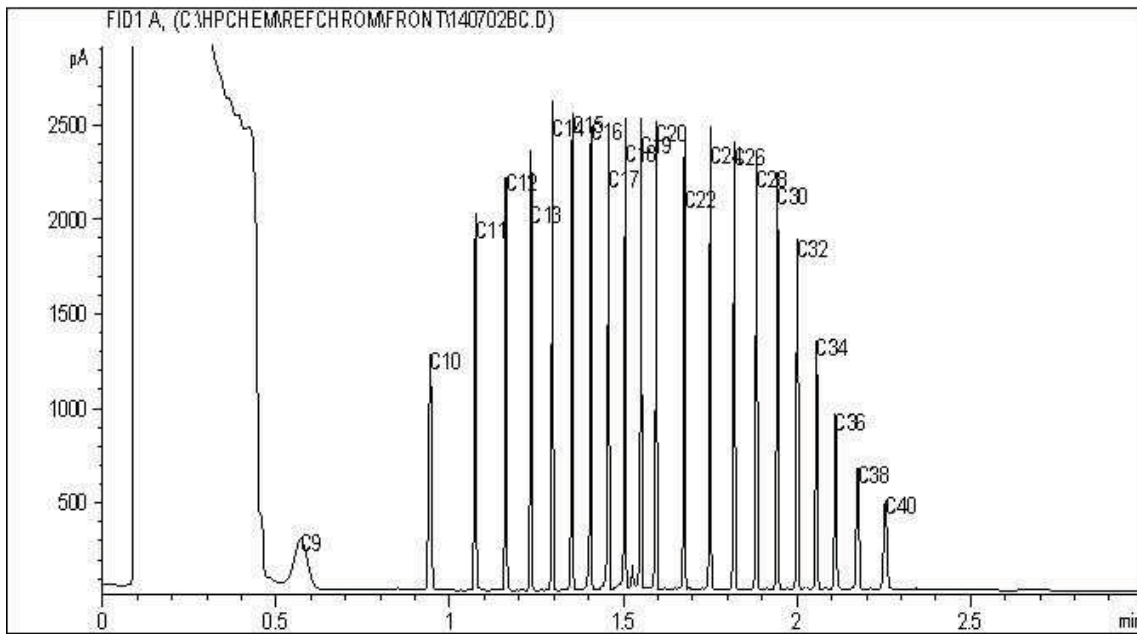
TYPICAL PRODUCT CARBON NUMBER RANGES

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BC Hydrocarbons in Soil by GC/FID Chromatogram



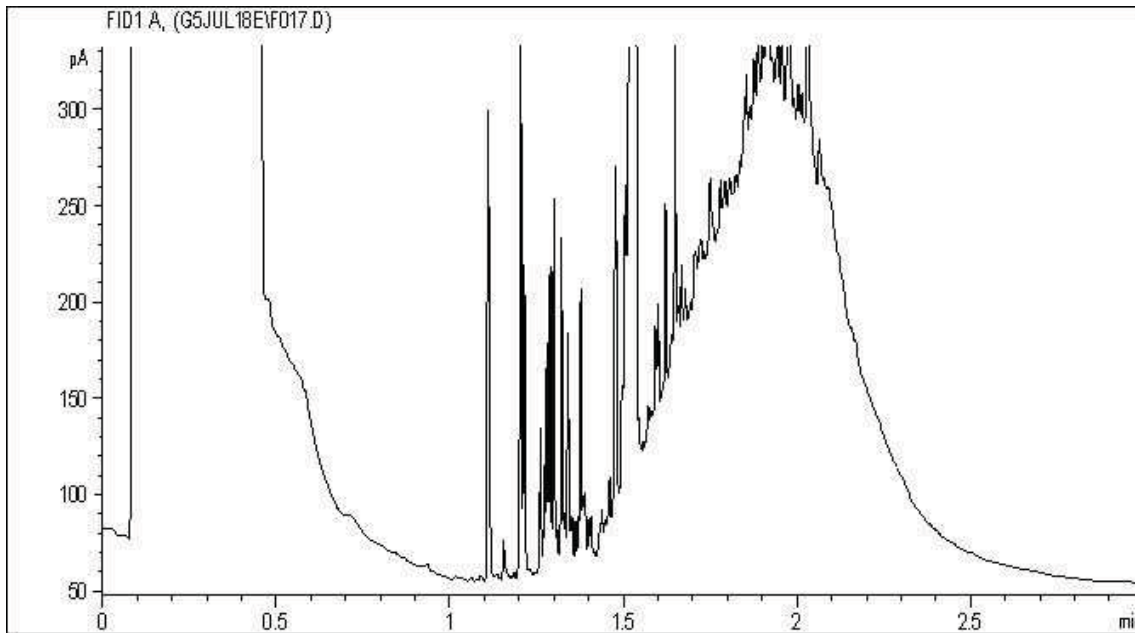
Carbon Range Distribution - Reference Chromatogram



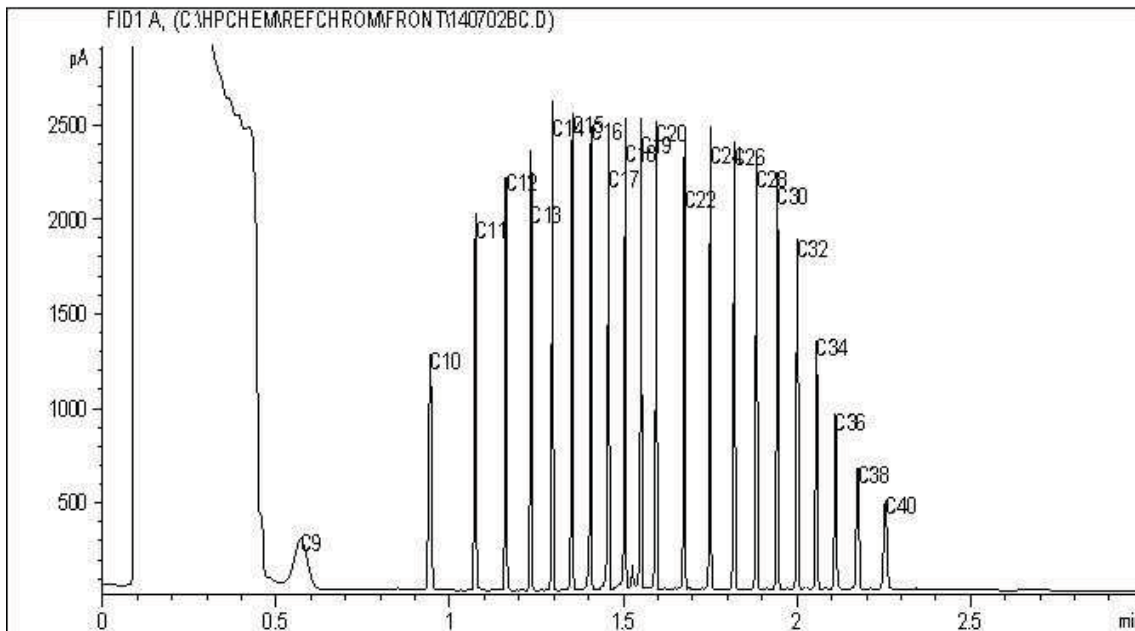
TYPICAL PRODUCT CARBON NUMBER RANGES

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BC Hydrocarbons in Soil by GC/FID Chromatogram



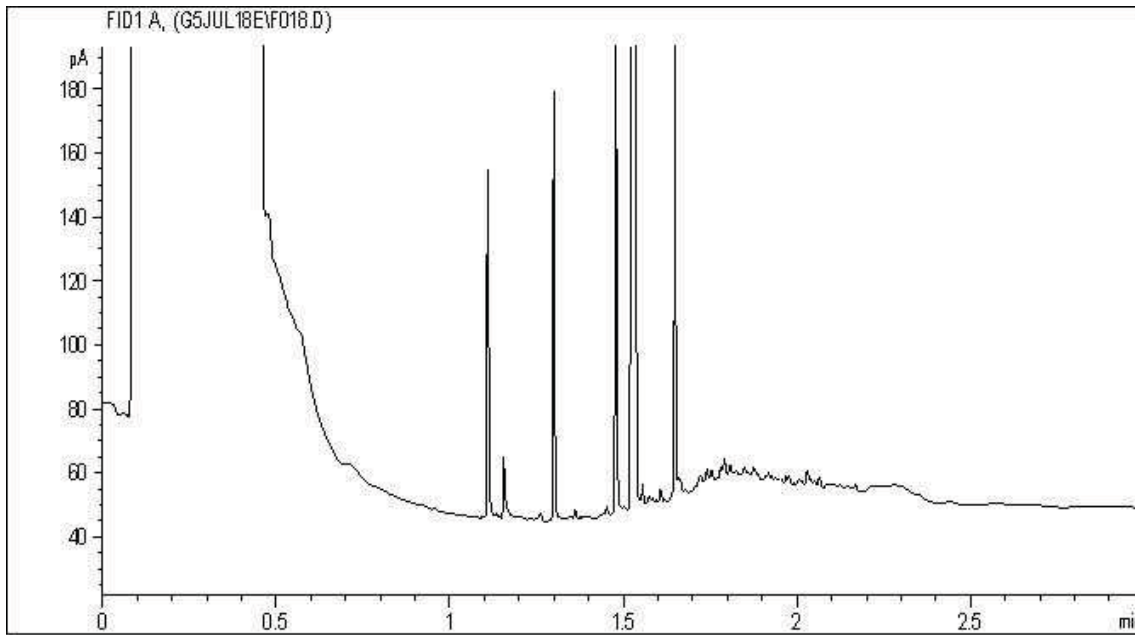
Carbon Range Distribution - Reference Chromatogram



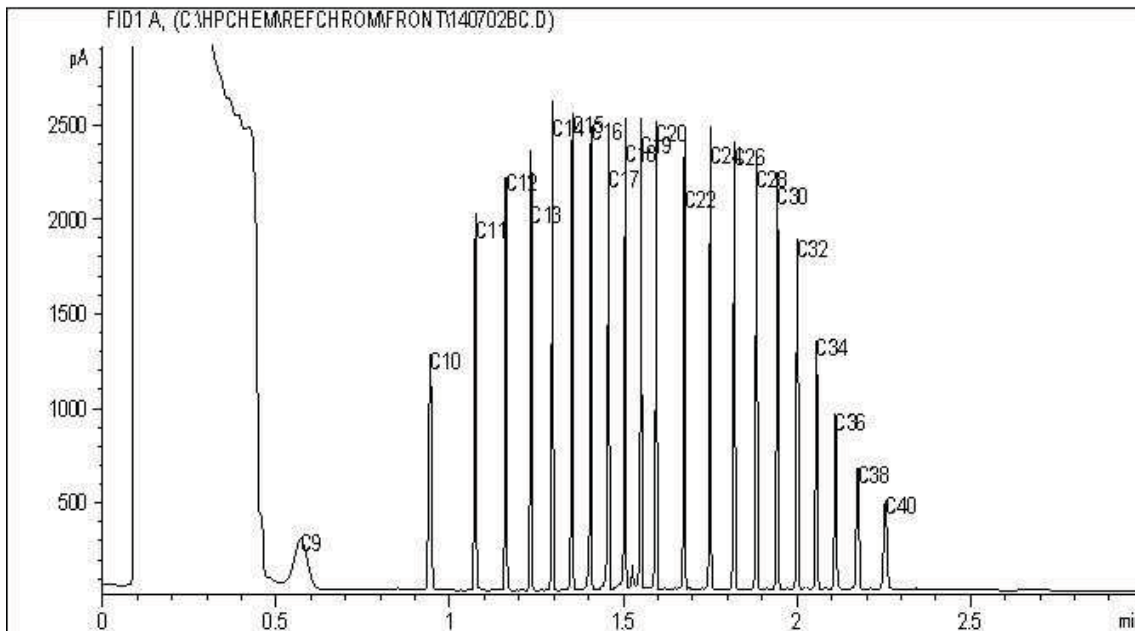
TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

BC Hydrocarbons in Soil by GC/FID Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Your C.O.C. #: K008066

Attention: Nicole MacDonald
 KEYSTONE ENVIRONMENTAL LTD
 SUITE 320
 4400 DOMINION STREET
 BURNABY, BC
 CANADA V5G 4G3

Report Date: 2014/07/22
 Report #: R1607799
 Version: 1

CERTIFICATE OF ANALYSIS


MAXXAM JOB #: B459953
Received: 2014/07/15, 15:55

Sample Matrix: Water
 # Samples Received: 8

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
BTEX/MTBE LH, VH, F1 SIM/MS	1	2014/07/16	2014/07/17	BBY8-SOP-00010	EPA 8260C
Phenols in Water by GCMS	4	2014/07/17	2014/07/21	BBY8SOP-00025	EPA 8270D
Hardness (calculated as CaCO3)	7	N/A	2014/07/21	BBY7SOP-00002	EPA 6020A
Mercury (Dissolved) by CVAf	7	N/A	2014/07/21	BBY7SOP-00015	BC MOE Lab Manual
Extrac. Pet HC when LEPH/HEPH required	7	2014/07/17	2014/07/18	BBY8SOP-00029	BC Env. Lab Manual
Na, K, Ca, Mg, S by CRC ICPMS (diss.)	7	N/A	2014/07/21	BBY7SOP-00002	EPA 6020A
Elements by CRC ICPMS (dissolved)	7	N/A	2014/07/19	BBY7SOP-00002	EPA 6020A
PAH in Water by GC/MS (SIM)	7	2014/07/17	2014/07/18	BBY8SOP-00021	EPA 8270D
Total LMW, HMW, Total PAH Calc	7	N/A	2014/07/21	BBY WI-00033	BC MOE Lab Method
Filter and HNO3 Preserve for Metals	7	N/A	2014/07/19	BBY6WI-00001	EPA 200.2
pH Water (1)	4	N/A	2014/07/16	BBY6SOP-00026	SM-4500H+B
Phenols (Totals) in Water by GCMS	4	2014/07/16	2014/07/22	BBY8SOP-00025	EPA SW 846 8270D
EPH less PAH in Water by GC/FID	7	N/A	2014/07/21	BBY WI-00033	BC MOE Lab Method
Extra VOCs in Water by HS GC/MS	3	N/A	2014/07/16	BRN SOP 00302 R8.0	EPA 8260C
VOCs, VH, F1, LH in Water by HS GC/MS	3	2014/07/16	2014/07/16	BBY8-SOP-00009	EPA 8260C
Volatile HC-BTEX	3	N/A	2014/07/17	BBY WI-00033	BC MOE Lab Method
Volatile HC-BTEX	1	N/A	2014/07/18	BBY WI-00033	BC MOE Lab Method

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) The BC-MOE and APHA Standard Method require pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the BC-MOE/APHA Standard Method holding time.

Encryption Key  Jennifer Villocero
 22 Jul 2014 17:03:58 -07:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
 Amandeep Nagra, Account Specialist
 Email: ANagra@maxxam.ca
 Phone# (604)639-2602

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Maxxam Job #: B459953
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
Sampler Initials: BL

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		KC4032	KC4033	KC4035	KC4036	KC4037	KC4038	KC4039	
Sampling Date		2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15	
COC Number		K008066	K008066	K008066	K008066	K008066	K008066	K008066	
	Units	MW14-1	MW14-2	MW14-4	MW14-5	MW14-6	MW14-7	MW14-A	QC Batch
Calculated Parameters									
Filter and HNO3 Preservation	N/A	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	FIELD	ONSITE
Physical Properties									
pH	pH	7.88				7.21	7.25	7.23	7567007

Maxxam Job #: B459953
 Report Date: 2014/07/22

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		KC4032	KC4037	KC4038	KC4039		
Sampling Date		2014/07/15	2014/07/15	2014/07/15	2014/07/15		
COC Number		K008066	K008066	K008066	K008066		
	Units	MW14-1	MW14-6	MW14-7	MW14-A	RDL	QC Batch
Phenols							
Total Monochlorophenols	ug/L	<0.63	<0.63	<0.63	<0.63	0.63	7565901
Total Dichlorophenols	ug/L	<0.63	<0.63	<0.63	<0.63	0.63	7565901
Total Trichlorophenols	ug/L	<0.63	<0.63	<0.63	<0.63	0.63	7565901
Total Tetrachlorophenols	ug/L	<0.63	<0.63	<0.63	<0.63	0.63	7565901
Total Chlorophenols	ug/L	<0.63	<0.63	<0.63	<0.63	0.63	7565901
SEMI-VOLATILE ORGANICS							
2-chlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
3 & 4-chlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,4 + 2,5-Dichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,3-Dichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,6-dichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
3,5-Dichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
3,4-Dichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,4,5-trichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,4,6-trichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,3,5-trichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,3,6-Trichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,3,4-trichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
3,4,5-Trichlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,3,4,6-tetrachlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,3,4,5-tetrachlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
2,3,5,6-tetrachlorophenol	ug/L	<0.10	<0.10	<0.10	<0.10	0.10	7568135
Pentachlorophenol	ug/L	<0.63 (1)	<0.63 (1)	<0.63 (1)	<0.63 (1)	0.63	7568135
Surrogate Recovery (%)							
2,4,6-TRIBROMOPHENOL (sur.)	%	85	88	83	90		7568135
2-FLUOROPHENOL (sur.)	%	36	21	18 (2)	28		7568135
RDL = Reportable Detection Limit							
(1) Detection limits raised due to matrix interference.							
(2) Surrogate recovery below acceptance criteria. Unable to reanalyze due to insufficient sample.							



Maxxam Job #: B459953
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
Sampler Initials: BL

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		KC4033	KC4034	KC4036		
Sampling Date		2014/07/15	2014/07/15	2014/07/15		
COC Number		K008066	K008066	K008066		
	Units	MW14-2	MW14-3	MW14-5	RDL	QC Batch
Volatiles						
2-Butanone (MEK)	ug/L	<10	<10	<10	10	7566993
4-Methyl-2-pentanone (MIBK)	ug/L	<10	<10	<10	10	7566993
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	95	97	97		7566993
4-Bromofluorobenzene (sur.)	%	98	99	99		7566993
D4-1,2-Dichloroethane (sur.)	%	88	89	88		7566993
RDL = Reportable Detection Limit						

Maxxam Job #: B459953
 Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

BCCSR BTEX/VPH IN WATER (WATER)

Maxxam ID		KC4035		
Sampling Date		2014/07/15		
COC Number		K008066		
	Units	MW14-4	RDL	QC Batch
Volatiles				
VPH (VHW6 to 10 - BTEX)	ug/L	3300	300	7565903
Benzene	ug/L	100	0.40	7566909
Toluene	ug/L	10	0.40	7566909
Ethylbenzene	ug/L	640	0.40	7566909
m & p-Xylene	ug/L	33	0.40	7566909
o-Xylene	ug/L	3.7	0.40	7566909
Styrene	ug/L	<0.40	0.40	7566909
Xylenes (Total)	ug/L	37	0.40	7566909
VH C6-C10	ug/L	4100	300	7566909
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	103		7566909
4-Bromofluorobenzene (sur.)	%	98		7566909
D4-1,2-Dichloroethane (sur.)	%	104		7566909
RDL = Reportable Detection Limit				

Maxxam Job #: B459953
 Report Date: 2014/07/22

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

LEPH & HEPH FOR CSR IN WATER (WATER)

Maxxam ID		KC4032	KC4033		KC4035		KC4036		KC4037		
Sampling Date		2014/07/15	2014/07/15		2014/07/15		2014/07/15		2014/07/15		
COC Number		K008066	K008066		K008066		K008066		K008066		
	Units	MW14-1	MW14-2	RDL	MW14-4	RDL	MW14-5	RDL	MW14-6	RDL	QC Batch
Polycyclic Aromatics											
Low Molecular Weight PAH`s	ug/L	<0.24	<0.24	0.24	200	0.50	1.8	0.24	6.9	0.24	7565899
High Molecular Weight PAH`s	ug/L	<0.050	0.076	0.050	<0.050	0.050	<0.050	0.050	1.1	0.11	7565899
Total PAH	ug/L	<0.24	<0.24	0.24	200	0.50	1.8	0.24	8.0	0.24	7565899
Naphthalene	ug/L	<0.10	<0.10	0.10	110 (1)	0.50	1.3	0.10	2.7	0.10	7568276
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	92 (1)	0.50	0.42	0.10	1.6	0.10	7568276
Quinoline	ug/L	<0.24	<0.24	0.24	<0.24	0.24	<0.24	0.24	<0.24	0.24	7568276
Acenaphthylene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	7568276
Acenaphthene	ug/L	<0.050	<0.050	0.050	0.26	0.050	0.057	0.050	1.1	0.050	7568276
Fluorene	ug/L	<0.050	<0.050	0.050	0.13	0.050	<0.050	0.050	0.62	0.050	7568276
Phenanthrene	ug/L	<0.050	<0.050	0.050	0.078	0.050	<0.050	0.050	0.76	0.050	7568276
Anthracene	ug/L	<0.010	<0.010	0.010	<0.010	0.010	<0.010	0.010	0.16	0.010	7568276
Acridine	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	7568276
Fluoranthene	ug/L	<0.020	0.027	0.020	<0.020	0.020	<0.020	0.020	0.36	0.020	7568276
Pyrene	ug/L	<0.020	0.026	0.020	<0.020	0.020	<0.020	0.020	0.37	0.020	7568276
Benzo(a)anthracene	ug/L	<0.010	0.011	0.010	<0.010	0.010	<0.010	0.010	0.11	0.010	7568276
Chrysene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	0.16	0.050	7568276
Benzo(b&j)fluoranthene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.11 (2)	0.11	7568276
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	7568276
Benzo(a)pyrene	ug/L	<0.0090	0.012	0.0090	<0.0090	0.0090	<0.0090	0.0090	0.084	0.0090	7568276
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	7568276
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	7568276
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	7568276
Calculated Parameters											
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	0.20	3.3	0.20	<0.20	0.20	<0.20	0.20	7565902
HEPH (C19-C32 less PAH)	mg/L	<0.20	<0.20	0.20	<0.20	0.20	<0.20	0.20	0.64	0.20	7565902
Ext. Pet. Hydrocarbon											
EPH (C10-C19)	mg/L	<0.20	<0.20	0.20	3.4	0.20	<0.20	0.20	<0.20	0.20	7568291
EPH (C19-C32)	mg/L	<0.20	<0.20	0.20	<0.20	0.20	<0.20	0.20	0.64	0.20	7568291
Surrogate Recovery (%)											
O-TERPHENYL (sur.)	%	104	103		105		104		105		7568291
D10-ANTHRACENE (sur.)	%	116	111		113		108		112		7568276
D8-ACENAPHTHYLENE (sur.)	%	107	100		104		100		104		7568276
D8-NAPHTHALENE (sur.)	%	104	101		115		99		104		7568276
RDL = Reportable Detection Limit											
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.											
(2) RDL raised due to sample matrix interference.											



Maxxam Job #: B459953
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
Sampler Initials: BL

LEPH & HEPH FOR CSR IN WATER (WATER)

Maxxam ID		KC4032	KC4033		KC4035		KC4036		KC4037		
Sampling Date		2014/07/15	2014/07/15		2014/07/15		2014/07/15		2014/07/15		
COC Number		K008066	K008066		K008066		K008066		K008066		
	Units	MW14-1	MW14-2	RDL	MW14-4	RDL	MW14-5	RDL	MW14-6	RDL	QC Batch
D9-Acridine	%	95	87		93		90		93		7568276
TERPHENYL-D14 (sur.)	%	109	96		95		93		87		7568276
RDL = Reportable Detection Limit											

Maxxam Job #: B459953
 Report Date: 2014/07/22

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

LEPH & HEPH FOR CSR IN WATER (WATER)

Maxxam ID		KC4038	KC4039		
Sampling Date		2014/07/15	2014/07/15		
COC Number		K008066	K008066		
	Units	MW14-7	MW14-A	RDL	QC Batch
Polycyclic Aromatics					
Low Molecular Weight PAH`s	ug/L	<0.24	7.1	0.24	7565899
High Molecular Weight PAH`s	ug/L	0.23	0.91	0.050	7565899
Total PAH	ug/L	0.36	8.0	0.24	7565899
Naphthalene	ug/L	<0.10	2.8	0.10	7568276
2-Methylnaphthalene	ug/L	<0.10	1.6	0.10	7568276
Quinoline	ug/L	<0.24	<0.24	0.24	7568276
Acenaphthylene	ug/L	<0.050	<0.050	0.050	7568276
Acenaphthene	ug/L	<0.050	1.3	0.050	7568276
Fluorene	ug/L	<0.050	0.62	0.050	7568276
Phenanthrene	ug/L	0.12	0.72	0.050	7568276
Anthracene	ug/L	0.018	0.14	0.010	7568276
Acridine	ug/L	<0.050	<0.050	0.050	7568276
Fluoranthene	ug/L	0.088	0.30	0.020	7568276
Pyrene	ug/L	0.087	0.29	0.020	7568276
Benzo(a)anthracene	ug/L	0.031	0.073	0.010	7568276
Chrysene	ug/L	<0.050	0.12	0.050	7568276
Benzo(b&j)fluoranthene	ug/L	<0.050	0.077	0.050	7568276
Benzo(k)fluoranthene	ug/L	<0.050	<0.050	0.050	7568276
Benzo(a)pyrene	ug/L	0.026	0.054	0.0090	7568276
Indeno(1,2,3-cd)pyrene	ug/L	<0.050	<0.050	0.050	7568276
Dibenz(a,h)anthracene	ug/L	<0.050	<0.050	0.050	7568276
Benzo(g,h,i)perylene	ug/L	<0.050	<0.050	0.050	7568276
Calculated Parameters					
LEPH (C10-C19 less PAH)	mg/L	<0.20	<0.20	0.20	7565902
HEPH (C19-C32 less PAH)	mg/L	<0.20	0.54	0.20	7565902
Ext. Pet. Hydrocarbon					
EPH (C10-C19)	mg/L	<0.20	<0.20	0.20	7568291
EPH (C19-C32)	mg/L	<0.20	0.54	0.20	7568291
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	103	102		7568291
D10-ANTHRACENE (sur.)	%	105	113		7568276
D8-ACENAPHTHYLENE (sur.)	%	98	103		7568276
D8-NAPHTHALENE (sur.)	%	102	103		7568276
D9-Acridine	%	90	95		7568276
TERPHENYL-D14 (sur.)	%	95	88		7568276
RDL = Reportable Detection Limit					

Maxxam Job #: B459953
 Report Date: 2014/07/22

 KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

CSR DISSOLVED METALS IN WATER WITH CV HG (WATER)

Maxxam ID		KC4032	KC4032	KC4033	KC4035	KC4036	KC4037	KC4038		
Sampling Date		2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15		
COC Number		K008066	K008066	K008066	K008066	K008066	K008066	K008066		
	Units	MW14-1	MW14-1 Lab-Dup	MW14-2	MW14-4	MW14-5	MW14-6	MW14-7	RDL	QC Batch
Misc. Inorganics										
Dissolved Hardness (CaCO ₃)	mg/L	57.2		330	117	233	260	76.6	0.50	7565847
Elements										
Dissolved Mercury (Hg)	ug/L	<0.010	<0.010	<0.010	<0.010	0.013	<0.010	<0.010	0.010	7571873
Dissolved Metals by ICPMS										
Dissolved Aluminum (Al)	ug/L	28.6		11.3	46.7	365	17.5	15.3	3.0	7569943
Dissolved Antimony (Sb)	ug/L	0.74		0.59	<0.50	0.79	<0.50	<0.50	0.50	7569943
Dissolved Arsenic (As)	ug/L	0.30		1.19	1.65	0.76	3.78	1.00	0.10	7569943
Dissolved Barium (Ba)	ug/L	12.7		90.6	48.6	53.0	213	12.9	1.0	7569943
Dissolved Beryllium (Be)	ug/L	<0.10		<0.10	<0.10	0.11	<0.10	<0.10	0.10	7569943
Dissolved Bismuth (Bi)	ug/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7569943
Dissolved Boron (B)	ug/L	<50		593	77	400	93	<50	50	7569943
Dissolved Cadmium (Cd)	ug/L	0.016		0.100	0.085	0.051	<0.010	0.176	0.010	7569943
Dissolved Chromium (Cr)	ug/L	<1.0		<1.0	<1.0	<1.0	<1.0	<1.0	1.0	7569943
Dissolved Cobalt (Co)	ug/L	1.09		4.59	15.2	17.9	10.7	9.29	0.50	7569943
Dissolved Copper (Cu)	ug/L	1.60		0.62	0.40	2.97	0.24	1.77	0.20	7569943
Dissolved Iron (Fe)	ug/L	5.0		2960	5230	1380	22800	215	5.0	7569943
Dissolved Lead (Pb)	ug/L	<0.20		<0.20	10.5	<0.20	<0.20	<0.20	0.20	7569943
Dissolved Lithium (Li)	ug/L	<5.0		<5.0	<5.0	10.5	<5.0	<5.0	5.0	7569943
Dissolved Manganese (Mn)	ug/L	155		1150	1930	2160	3530	943	1.0	7569943
Dissolved Molybdenum (Mo)	ug/L	14.7		1.5	<1.0	<1.0	1.3	<1.0	1.0	7569943
Dissolved Nickel (Ni)	ug/L	1.2		5.6	16.4	32.2	7.4	14.1	1.0	7569943
Dissolved Selenium (Se)	ug/L	0.11		0.17	0.17	0.21	<0.10	<0.10	0.10	7569943
Dissolved Silicon (Si)	ug/L	4270		7500	7770	10800	11100	7310	100	7569943
Dissolved Silver (Ag)	ug/L	<0.020		<0.020	<0.020	<0.020	<0.020	<0.020	0.020	7569943
Dissolved Strontium (Sr)	ug/L	77.5		983	193	318	611	174	1.0	7569943
Dissolved Thallium (Tl)	ug/L	<0.050		<0.050	0.103	0.146	<0.050	<0.050	0.050	7569943
Dissolved Tin (Sn)	ug/L	<5.0		<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7569943
Dissolved Titanium (Ti)	ug/L	<5.0		<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7569943
Dissolved Uranium (U)	ug/L	<0.10		0.60	<0.10	0.56	0.22	<0.10	0.10	7569943
Dissolved Vanadium (V)	ug/L	<5.0		<5.0	<5.0	<5.0	<5.0	<5.0	5.0	7569943
Dissolved Zinc (Zn)	ug/L	<5.0		6.2	6.8	18.0	<5.0	11.0	5.0	7569943
Dissolved Zirconium (Zr)	ug/L	<0.50		<0.50	<0.50	<0.50	<0.50	<0.50	0.50	7569943
Dissolved Calcium (Ca)	mg/L	19.9		117	35.3	70.0	89.2	23.6	0.050	7565848
Dissolved Magnesium (Mg)	mg/L	1.79		8.98	6.91	14.3	8.97	4.28	0.050	7565848
RDL = Reportable Detection Limit										
Lab-Dup = Laboratory Initiated Duplicate										

Maxxam Job #: B459953
 Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

CSR DISSOLVED METALS IN WATER WITH CV HG (WATER)

Maxxam ID		KC4032	KC4032	KC4033	KC4035	KC4036	KC4037	KC4038		
Sampling Date		2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15	2014/07/15		
COC Number		K008066	K008066	K008066	K008066	K008066	K008066	K008066		
	Units	MW14-1	MW14-1 Lab-Dup	MW14-2	MW14-4	MW14-5	MW14-6	MW14-7	RDL	QC Batch
Dissolved Potassium (K)	mg/L	2.49		6.54	3.51	5.05	6.14	1.48	0.050	7565848
Dissolved Sodium (Na)	mg/L	4.98		17.4	12.4	34.2	12.6	5.83	0.050	7565848
Dissolved Sulphur (S)	mg/L	<3.0		11.0	28.7	28.8	27.9	16.5	3.0	7565848
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate										

CSR DISSOLVED METALS IN WATER WITH CV HG (WATER)

Maxxam ID		KC4039	KC4039		
Sampling Date		2014/07/15	2014/07/15		
COC Number		K008066	K008066		
	Units	MW14-A	MW14-A Lab-Dup	RDL	QC Batch
Misc. Inorganics					
Dissolved Hardness (CaCO3)	mg/L	262		0.50	7565847
Elements					
Dissolved Mercury (Hg)	ug/L	<0.010		0.010	7571873
Dissolved Metals by ICPMS					
Dissolved Aluminum (Al)	ug/L	17.2	16.3	3.0	7569943
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	7569943
Dissolved Arsenic (As)	ug/L	3.72	3.80	0.10	7569943
Dissolved Barium (Ba)	ug/L	221	213	1.0	7569943
Dissolved Beryllium (Be)	ug/L	<0.10	<0.10	0.10	7569943
Dissolved Bismuth (Bi)	ug/L	<1.0	<1.0	1.0	7569943
Dissolved Boron (B)	ug/L	88	88	50	7569943
Dissolved Cadmium (Cd)	ug/L	<0.010	<0.010	0.010	7569943
Dissolved Chromium (Cr)	ug/L	<1.0	<1.0	1.0	7569943
Dissolved Cobalt (Co)	ug/L	9.94	10.1	0.50	7569943
Dissolved Copper (Cu)	ug/L	0.23	0.21	0.20	7569943
Dissolved Iron (Fe)	ug/L	23400	22900	5.0	7569943
Dissolved Lead (Pb)	ug/L	<0.20	<0.20	0.20	7569943
Dissolved Lithium (Li)	ug/L	<5.0	<5.0	5.0	7569943
Dissolved Manganese (Mn)	ug/L	3580	3580	1.0	7569943
Dissolved Molybdenum (Mo)	ug/L	1.3	1.3	1.0	7569943
Dissolved Nickel (Ni)	ug/L	7.4	7.3	1.0	7569943
Dissolved Selenium (Se)	ug/L	<0.10	0.10	0.10	7569943
Dissolved Silicon (Si)	ug/L	11600	11100	100	7569943
Dissolved Silver (Ag)	ug/L	<0.020	<0.020	0.020	7569943
Dissolved Strontium (Sr)	ug/L	591	609	1.0	7569943
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	7569943
Dissolved Tin (Sn)	ug/L	<5.0	<5.0	5.0	7569943
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	7569943
Dissolved Uranium (U)	ug/L	0.22	0.22	0.10	7569943
Dissolved Vanadium (V)	ug/L	<5.0	<5.0	5.0	7569943
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	7569943
Dissolved Zirconium (Zr)	ug/L	<0.50	<0.50	0.50	7569943
Dissolved Calcium (Ca)	mg/L	91.0		0.050	7565848
Dissolved Magnesium (Mg)	mg/L	8.52		0.050	7565848
RDL = Reportable Detection Limit					
Lab-Dup = Laboratory Initiated Duplicate					



Maxxam Job #: B459953
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
Sampler Initials: BL

CSR DISSOLVED METALS IN WATER WITH CV HG (WATER)

Maxxam ID		KC4039	KC4039		
Sampling Date		2014/07/15	2014/07/15		
COC Number		K008066	K008066		
	Units	MW14-A	MW14-A Lab-Dup	RDL	QC Batch
Dissolved Potassium (K)	mg/L	6.05		0.050	7565848
Dissolved Sodium (Na)	mg/L	12.2		0.050	7565848
Dissolved Sulphur (S)	mg/L	29.6		3.0	7565848
RDL = Reportable Detection Limit					
Lab-Dup = Laboratory Initiated Duplicate					

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		KC4033	KC4034	KC4036		
Sampling Date		2014/07/15	2014/07/15	2014/07/15		
COC Number		K008066	K008066	K008066		
	Units	MW14-2	MW14-3	MW14-5	RDL	QC Batch
Volatiles						
VPH (VHW6 to 10 - BTEX)	ug/L	<300	<300	<300	300	7565903
Chloromethane	ug/L	<1.0	<1.0	<1.0	1.0	7566912
Vinyl chloride	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Chloroethane	ug/L	<1.0	<1.0	<1.0	1.0	7566912
Trichlorofluoromethane	ug/L	<4.0	<4.0	<4.0	4.0	7566912
1,1,2Trichloro-1,2,2Trifluoroethane	ug/L	<2.0	<2.0	<2.0	2.0	7566912
Dichlorodifluoromethane	ug/L	<2.0	<2.0	<2.0	2.0	7566912
1,1-dichloroethene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Dichloromethane	ug/L	<2.0	<2.0	<2.0	2.0	7566912
trans-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	1.0	7566912
1,1-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	7566912
cis-1,2-dichloroethene	ug/L	<1.0	<1.0	<1.0	1.0	7566912
Chloroform	ug/L	<1.0	<1.0	<1.0	1.0	7566912
1,1,1-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	7566912
1,2-dichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Carbon tetrachloride	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Benzene	ug/L	<0.40	<0.40	<0.40	0.40	7566912
1,2-dichloropropane	ug/L	<0.50	<0.50	<0.50	0.50	7566912
cis-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	7566912
trans-1,3-dichloropropene	ug/L	<1.0	<1.0	<1.0	1.0	7566912
Bromomethane	ug/L	<1.0	<1.0	<1.0	1.0	7566912
1,1,2-trichloroethane	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Trichloroethene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Chlorodibromomethane	ug/L	<1.0	<1.0	<1.0	1.0	7566912
1,2-dibromoethane	ug/L	<0.20	<0.20	<0.20	0.20	7566912
1,3-Butadiene	ug/L	<5.0	<5.0	<5.0	5.0	7566912
Tetrachloroethene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Bromodichloromethane	ug/L	<1.0	<1.0	<1.0	1.0	7566912
Toluene	ug/L	<0.40	<0.40	<0.40	0.40	7566912
Ethylbenzene	ug/L	<0.40	<0.40	0.56	0.40	7566912
m & p-Xylene	ug/L	<0.40	<0.40	5.8	0.40	7566912
Bromoform	ug/L	<1.0	<1.0	<1.0	1.0	7566912
Styrene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
o-Xylene	ug/L	<0.40	<0.40	0.49	0.40	7566912
Xylenes (Total)	ug/L	<0.40	<0.40	6.3	0.40	7566912
RDL = Reportable Detection Limit						

Maxxam Job #: B459953
 Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

CSR VOC + VPH IN WATER (WATER)

Maxxam ID		KC4033	KC4034	KC4036		
Sampling Date		2014/07/15	2014/07/15	2014/07/15		
COC Number		K008066	K008066	K008066		
	Units	MW14-2	MW14-3	MW14-5	RDL	QC Batch
1,1,1,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	7566912
1,1,2,2-tetrachloroethane	ug/L	<0.50	<0.50	<0.50	0.50	7566912
1,2-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
1,3-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
1,4-dichlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Chlorobenzene	ug/L	<0.50	<0.50	<0.50	0.50	7566912
Dibromomethane	ug/L	<0.90	<0.90	<0.90	0.90	7566912
Bromobenzene	ug/L	<2.0	<2.0	<2.0	2.0	7566912
VH C6-C10	ug/L	<300	<300	<300	300	7566912
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	101	103	98		7566912
4-Bromofluorobenzene (sur.)	%	96	96	100		7566912
D4-1,2-Dichloroethane (sur.)	%	110	88	92		7566912
RDL = Reportable Detection Limit						

Maxxam Job #: B459953
Report Date: 2014/07/22

KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
Sampler Initials: BL

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	22.7°C
Package 2	25.3°C
Package 3	20.3°C

Results relate only to the items tested.



Maxxam Job #: B459953
 Report Date: 2014/07/22

QUALITY ASSURANCE REPORT

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
7566909	1,4-Difluorobenzene (sur.)	2014/07/17	105	70 - 130	105	70 - 130	101	%		
7566909	4-Bromofluorobenzene (sur.)	2014/07/17	98	70 - 130	100	70 - 130	98	%		
7566909	D4-1,2-Dichloroethane (sur.)	2014/07/17	103	70 - 130	103	70 - 130	108	%		
7566912	1,4-Difluorobenzene (sur.)	2014/07/16	103	70 - 130	100	70 - 130	103	%		
7566912	4-Bromofluorobenzene (sur.)	2014/07/16	102	70 - 130	103	70 - 130	98	%		
7566912	D4-1,2-Dichloroethane (sur.)	2014/07/16	94	70 - 130	97	70 - 130	87	%		
7566993	1,4-Difluorobenzene (sur.)	2014/07/16	98	70 - 130	98	70 - 130	97	%		
7566993	4-Bromofluorobenzene (sur.)	2014/07/16	88	70 - 130	98	70 - 130	100	%		
7566993	D4-1,2-Dichloroethane (sur.)	2014/07/16	93	70 - 130	94	70 - 130	89	%		
7568135	2,4,6-TRIBROMOPHENOL (sur.)	2014/07/21			85	10 - 123	81	%		
7568135	2-FLUOROPHENOL (sur.)	2014/07/21			37	21 - 100	33	%		
7568276	D10-ANTHRACENE (sur.)	2014/07/18	128	60 - 130	116	60 - 130	115	%		
7568276	D8-ACENAPHTHYLENE (sur.)	2014/07/18	122	50 - 130	106	50 - 130	107	%		
7568276	D8-NAPHTHALENE (sur.)	2014/07/18	121	50 - 130	106	50 - 130	106	%		
7568276	D9-Acridine	2014/07/18	109	50 - 130	94	50 - 130	92	%		
7568276	TERPHENYL-D14 (sur.)	2014/07/18	114	60 - 130	111	60 - 130	110	%		
7568291	O-TERPHENYL (sur.)	2014/07/18	104	50 - 130	107	50 - 130	113	%		
7566909	Benzene	2014/07/17	104	70 - 130	110	70 - 130	<0.40	ug/L		
7566909	Ethylbenzene	2014/07/17	104	70 - 130	107	70 - 130	<0.40	ug/L		
7566909	m & p-Xylene	2014/07/17	107	70 - 130	110	70 - 130	<0.40	ug/L		
7566909	o-Xylene	2014/07/17	101	70 - 130	104	70 - 130	<0.40	ug/L		
7566909	Styrene	2014/07/17	97	70 - 130	101	70 - 130	<0.40	ug/L		
7566909	Toluene	2014/07/17	110	70 - 130	112	70 - 130	<0.40	ug/L		
7566909	VH C6-C10	2014/07/17			93	70 - 130	<300	ug/L		
7566909	Xylenes (Total)	2014/07/17					<0.40	ug/L		
7566912	1,1,1,2-tetrachloroethane	2014/07/16	105	70 - 130	103	70 - 130	<0.50	ug/L		
7566912	1,1,1-trichloroethane	2014/07/16	107	70 - 130	104	70 - 130	<0.50	ug/L		
7566912	1,1,2,2-tetrachloroethane	2014/07/16	114	70 - 130	115	70 - 130	<0.50	ug/L		
7566912	1,1,2Trichloro-1,2,2Trifluoroethane	2014/07/16					<2.0	ug/L		
7566912	1,1,2-trichloroethane	2014/07/16	113	70 - 130	106	70 - 130	<0.50	ug/L		
7566912	1,1-dichloroethane	2014/07/16	104	70 - 130	103	70 - 130	<0.50	ug/L		
7566912	1,1-dichloroethene	2014/07/16	112	70 - 130	117	70 - 130	<0.50	ug/L		



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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
7566912	1,2-dibromoethane	2014/07/16	109	70 - 130	105	70 - 130	<0.20	ug/L		
7566912	1,2-dichlorobenzene	2014/07/16	120	70 - 130	115	70 - 130	<0.50	ug/L		
7566912	1,2-dichloroethane	2014/07/16	111	70 - 130	105	70 - 130	<0.50	ug/L		
7566912	1,2-dichloropropane	2014/07/16	110	70 - 130	106	70 - 130	<0.50	ug/L		
7566912	1,3-Butadiene	2014/07/16					<5.0	ug/L		
7566912	1,3-dichlorobenzene	2014/07/16	120	70 - 130	116	70 - 130	<0.50	ug/L		
7566912	1,4-dichlorobenzene	2014/07/16	118	70 - 130	114	70 - 130	<0.50	ug/L		
7566912	Benzene	2014/07/16	106	70 - 130	102	70 - 130	<0.40	ug/L		
7566912	Bromobenzene	2014/07/16	114	70 - 130	112	70 - 130	<2.0	ug/L		
7566912	Bromodichloromethane	2014/07/16	106	70 - 130	99	70 - 130	<1.0	ug/L		
7566912	Bromoform	2014/07/16	105	70 - 130	104	70 - 130	<1.0	ug/L		
7566912	Bromomethane	2014/07/16	115	60 - 140	108	60 - 140	<1.0	ug/L		
7566912	Carbon tetrachloride	2014/07/16	110	70 - 130	102	70 - 130	<0.50	ug/L		
7566912	Chlorobenzene	2014/07/16	107	70 - 130	108	70 - 130	<0.50	ug/L		
7566912	Chlorodibromomethane	2014/07/16	102	70 - 130	102	70 - 130	<1.0	ug/L		
7566912	Chloroethane	2014/07/16	89	60 - 140	88	60 - 140	<1.0	ug/L		
7566912	Chloroform	2014/07/16	102	70 - 130	100	70 - 130	<1.0	ug/L		
7566912	Chloromethane	2014/07/16	90	60 - 140	88	60 - 140	<1.0	ug/L		
7566912	cis-1,2-dichloroethene	2014/07/16	110	70 - 130	108	70 - 130	<1.0	ug/L		
7566912	cis-1,3-dichloropropene	2014/07/16	106	70 - 130	98	70 - 130	<1.0	ug/L		
7566912	Dibromomethane	2014/07/16	106	70 - 130	103	70 - 130	<0.90	ug/L		
7566912	Dichlorodifluoromethane	2014/07/16	104	60 - 140	102	60 - 140	<2.0	ug/L		
7566912	Dichloromethane	2014/07/16	117	70 - 130	115	70 - 130	<2.0	ug/L		
7566912	Ethylbenzene	2014/07/16	120	70 - 130	114	70 - 130	<0.40	ug/L		
7566912	m & p-Xylene	2014/07/16	119	70 - 130	118	70 - 130	<0.40	ug/L		
7566912	o-Xylene	2014/07/16	111	70 - 130	112	70 - 130	<0.40	ug/L		
7566912	Styrene	2014/07/16	112	70 - 130	109	70 - 130	<0.50	ug/L		
7566912	Tetrachloroethene	2014/07/16	110	70 - 130	107	70 - 130	<0.50	ug/L		
7566912	Toluene	2014/07/16	115	70 - 130	109	70 - 130	<0.40	ug/L		
7566912	trans-1,2-dichloroethene	2014/07/16	106	70 - 130	101	70 - 130	<1.0	ug/L		
7566912	trans-1,3-dichloropropene	2014/07/16	92	70 - 130	88	70 - 130	<1.0	ug/L		
7566912	Trichloroethene	2014/07/16	111	70 - 130	108	70 - 130	<0.50	ug/L		



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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
7566912	Trichlorofluoromethane	2014/07/16	120	60 - 140	134	60 - 140	<4.0	ug/L		
7566912	VH C6-C10	2014/07/16			101	70 - 130	<300	ug/L		
7566912	Vinyl chloride	2014/07/16	102	60 - 140	100	60 - 140	<0.50	ug/L		
7566912	Xylenes (Total)	2014/07/16					<0.40	ug/L		
7566993	2-Butanone (MEK)	2014/07/16	111	70 - 130	91	70 - 130	<10	ug/L		
7566993	4-Methyl-2-pentanone (MIBK)	2014/07/16	114	70 - 130	88	70 - 130	<10	ug/L		
7568135	2,3,4,5-tetrachlorophenol	2014/07/21			122	14 - 176	<0.10	ug/L		
7568135	2,3,4,6-tetrachlorophenol	2014/07/21			112	14 - 176	<0.10	ug/L		
7568135	2,3,4-trichlorophenol	2014/07/21			100	37 - 144	<0.10	ug/L		
7568135	2,3,5,6-tetrachlorophenol	2014/07/21			115	14 - 176	<0.10	ug/L		
7568135	2,3,5-trichlorophenol	2014/07/21			98	37 - 144	<0.10	ug/L		
7568135	2,3,6-Trichlorophenol	2014/07/21			96	37 - 144	<0.10	ug/L		
7568135	2,3-Dichlorophenol	2014/07/21			80	39 - 135	<0.10	ug/L		
7568135	2,4 + 2,5-Dichlorophenol	2014/07/21			85	39 - 135	<0.10	ug/L		
7568135	2,4,5-trichlorophenol	2014/07/21			100	37 - 144	<0.10	ug/L		
7568135	2,4,6-trichlorophenol	2014/07/21			93	37 - 144	<0.10	ug/L		
7568135	2,6-dichlorophenol	2014/07/21			84	39 - 135	<0.10	ug/L		
7568135	2-chlorophenol	2014/07/21			70	27 - 123	<0.10	ug/L		
7568135	3 & 4-chlorophenol	2014/07/21			84	27 - 123	<0.10	ug/L		
7568135	3,4,5-Trichlorophenol	2014/07/21			121	37 - 144	<0.10	ug/L		
7568135	3,4-Dichlorophenol	2014/07/21			101	39 - 135	<0.10	ug/L		
7568135	3,5-Dichlorophenol	2014/07/21			93	39 - 135	<0.10	ug/L		
7568135	Pentachlorophenol	2014/07/21			155	14 - 176	<0.10	ug/L		
7568276	2-Methylnaphthalene	2014/07/18	109	50 - 130	98	50 - 130	<0.10	ug/L		
7568276	Acenaphthene	2014/07/18	116	50 - 130	106	50 - 130	<0.050	ug/L		
7568276	Acenaphthylene	2014/07/18	110	50 - 130	100	50 - 130	<0.050	ug/L		
7568276	Acridine	2014/07/18	99	50 - 130	90	50 - 130	<0.050	ug/L		
7568276	Anthracene	2014/07/18	121	60 - 130	110	60 - 130	<0.010	ug/L		
7568276	Benzo(a)anthracene	2014/07/18	105	60 - 130	96	60 - 130	<0.010	ug/L		
7568276	Benzo(a)pyrene	2014/07/18	110	60 - 130	100	60 - 130	<0.0090	ug/L		
7568276	Benzo(b&j)fluoranthene	2014/07/18	104	60 - 130	97	60 - 130	<0.050	ug/L		
7568276	Benzo(g,h,i)perylene	2014/07/18	105	60 - 130	95	60 - 130	<0.050	ug/L		



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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
7568276	Benzo(k)fluoranthene	2014/07/18	104	60 - 130	94	60 - 130	<0.050	ug/L		
7568276	Chrysene	2014/07/18	108	60 - 130	99	60 - 130	<0.050	ug/L		
7568276	Dibenz(a,h)anthracene	2014/07/18	104	60 - 130	95	60 - 130	<0.050	ug/L		
7568276	Fluoranthene	2014/07/18	113	60 - 130	103	60 - 130	<0.020	ug/L		
7568276	Fluorene	2014/07/18	110	50 - 130	100	50 - 130	<0.050	ug/L		
7568276	Indeno(1,2,3-cd)pyrene	2014/07/18	110	60 - 130	100	60 - 130	<0.050	ug/L		
7568276	Naphthalene	2014/07/18	105	50 - 130	94	50 - 130	<0.10	ug/L		
7568276	Phenanthrene	2014/07/18	111	60 - 130	102	60 - 130	<0.050	ug/L		
7568276	Pyrene	2014/07/18	114	60 - 130	104	60 - 130	<0.020	ug/L		
7568276	Quinoline	2014/07/18	107	50 - 130	114	50 - 130	<0.24	ug/L		
7568291	EPH (C10-C19)	2014/07/18	103	50 - 130	96	50 - 130	<0.20	mg/L		
7568291	EPH (C19-C32)	2014/07/18	98	50 - 130	98	50 - 130	<0.20	mg/L		
7569943	Dissolved Aluminum (Al)	2014/07/19	101	80 - 120	109	80 - 120	<3.0	ug/L	5.6	20
7569943	Dissolved Antimony (Sb)	2014/07/19	101	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
7569943	Dissolved Arsenic (As)	2014/07/19	102	80 - 120	103	80 - 120	<0.10	ug/L	2.2	20
7569943	Dissolved Barium (Ba)	2014/07/19	NC	80 - 120	102	80 - 120	<1.0	ug/L	3.6	20
7569943	Dissolved Beryllium (Be)	2014/07/19	100	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
7569943	Dissolved Bismuth (Bi)	2014/07/19	100	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
7569943	Dissolved Boron (B)	2014/07/19					<50	ug/L	NC	20
7569943	Dissolved Cadmium (Cd)	2014/07/19	101	80 - 120	101	80 - 120	<0.010	ug/L	NC	20
7569943	Dissolved Chromium (Cr)	2014/07/19	102	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
7569943	Dissolved Cobalt (Co)	2014/07/19	NC	80 - 120	102	80 - 120	<0.50	ug/L	1.4	20
7569943	Dissolved Copper (Cu)	2014/07/19	100	80 - 120	106	80 - 120	<0.20	ug/L	NC	20
7569943	Dissolved Iron (Fe)	2014/07/19	NC	80 - 120	103	80 - 120	<5.0	ug/L	1.9	20
7569943	Dissolved Lead (Pb)	2014/07/19	98	80 - 120	97	80 - 120	<0.20	ug/L	NC	20
7569943	Dissolved Lithium (Li)	2014/07/19	102	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
7569943	Dissolved Manganese (Mn)	2014/07/19	NC	80 - 120	104	80 - 120	<1.0	ug/L	0.2	20
7569943	Dissolved Molybdenum (Mo)	2014/07/19	NC	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
7569943	Dissolved Nickel (Ni)	2014/07/19	NC	80 - 120	103	80 - 120	<1.0	ug/L	0.3	20
7569943	Dissolved Selenium (Se)	2014/07/19	90	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
7569943	Dissolved Silicon (Si)	2014/07/19					<100	ug/L	4.4	20
7569943	Dissolved Silver (Ag)	2014/07/19	103	80 - 120	97	80 - 120	<0.020	ug/L	NC	20

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QUALITY ASSURANCE REPORT(CONT'D)

KEYSTONE ENVIRONMENTAL LTD
 Client Project #: 12108-02
 Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
 Sampler Initials: BL

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
7569943	Dissolved Strontium (Sr)	2014/07/19	NC	80 - 120	100	80 - 120	<1.0	ug/L	3.0	20
7569943	Dissolved Thallium (Tl)	2014/07/19	101	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
7569943	Dissolved Tin (Sn)	2014/07/19	98	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
7569943	Dissolved Titanium (Ti)	2014/07/19	106	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
7569943	Dissolved Uranium (U)	2014/07/19	107	80 - 120	99	80 - 120	<0.10	ug/L	NC	20
7569943	Dissolved Vanadium (V)	2014/07/19	106	80 - 120	100	80 - 120	<5.0	ug/L	NC	20
7569943	Dissolved Zinc (Zn)	2014/07/19	101	80 - 120	103	80 - 120	<5.0	ug/L	NC	20
7569943	Dissolved Zirconium (Zr)	2014/07/19					<0.50	ug/L	NC	20
7571873	Dissolved Mercury (Hg)	2014/07/21	100	80 - 120	105	80 - 120	<0.010	ug/L	NC	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

Maxxam Job #: B459953
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KEYSTONE ENVIRONMENTAL LTD
Client Project #: 12108-02
Site Location: LE KUI; 456 PRIOR STREET VANCOUVER
Sampler Initials: BL

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Rob Reinert, Data Validation Coordinator

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



CHAIN OF CUSTODY RECORD

Page: 1 of 1

K008066

Maxxam Job#: B459 953

Invoice To: Require Report? Yes No

Report To:

Company Name: Keystone Environmental Ltd.
Contact Name: Nicole McDonald / Brian Lamm
Address: #320-4400 Dominion Street, Burnaby, BC V5G 4G3
Phone / Fax#: Ph: (604) 430-0671 Fax: (604) 430-0672

Company Name:
Contact Name:
Address:
Phone / Fax#:
E-mail:

PO #:
Quotation #:
Project #: 12108-02
Proj. Name: Le Kui
Location: 456 prlan Str. Vancouver,
Sampled By: B. Lamm

REGULATORY REQUIREMENTS SERVICE REQUESTED:

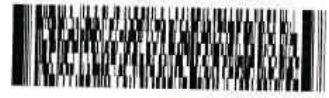
- CSR Regular Turn Around Time (TAT) (5 days for most tests)
OCME
BC Water Quality
Other RUSH (Please contact the lab)
1 Day 2 Day 3 Day
DRINKING WATER Date Required:

Special Instructions:
Return Cooler Ship Sample Bottles (please specify)

ANALYSIS REQUESTED

Table with columns for various chemical and physical analyses (MTBE, PCB, TOG, etc.) and checkboxes for their inclusion. Includes handwritten notes like 'Chloride' and 'dissolve Maximum'.

Table with columns: Sample Identification, Lab Identification, Sample Type, Date/Time Sampled. Contains handwritten entries for samples MW14-1 through MW14-A.



B459953

Table for Relinquished by (Brian Lamm, 14/07/15 3:54) and Received by (REBECCA BANZON, 2014/07/15 15:55).

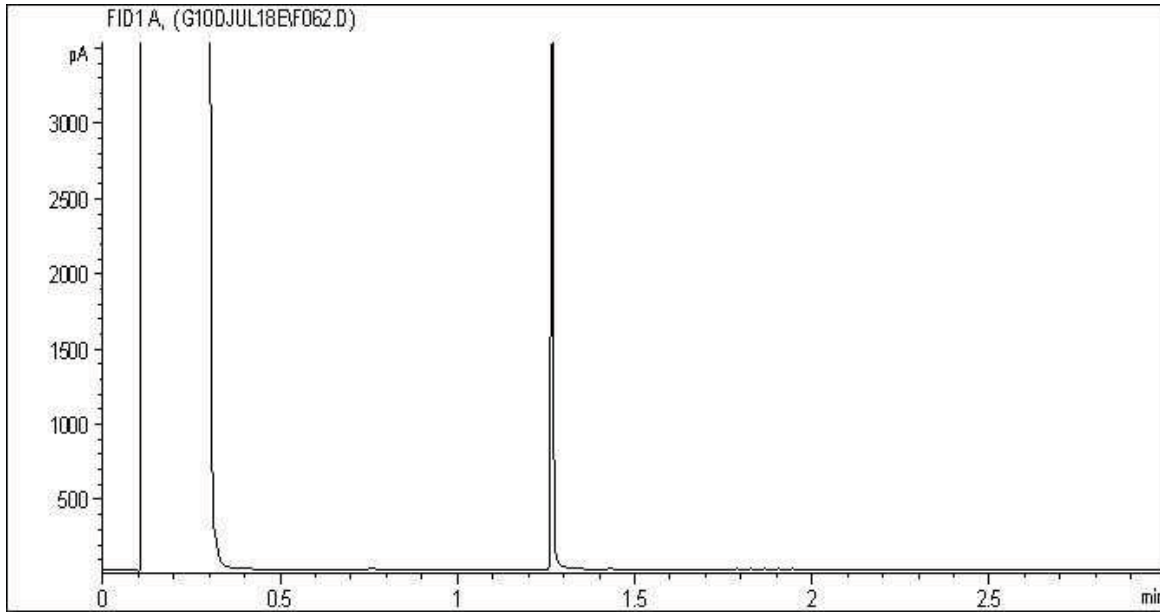
Table for Time Sensitive, Temperature on Receipt (22, 25, 26), and Custody Seal Intact on Cooler (N/A).

IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

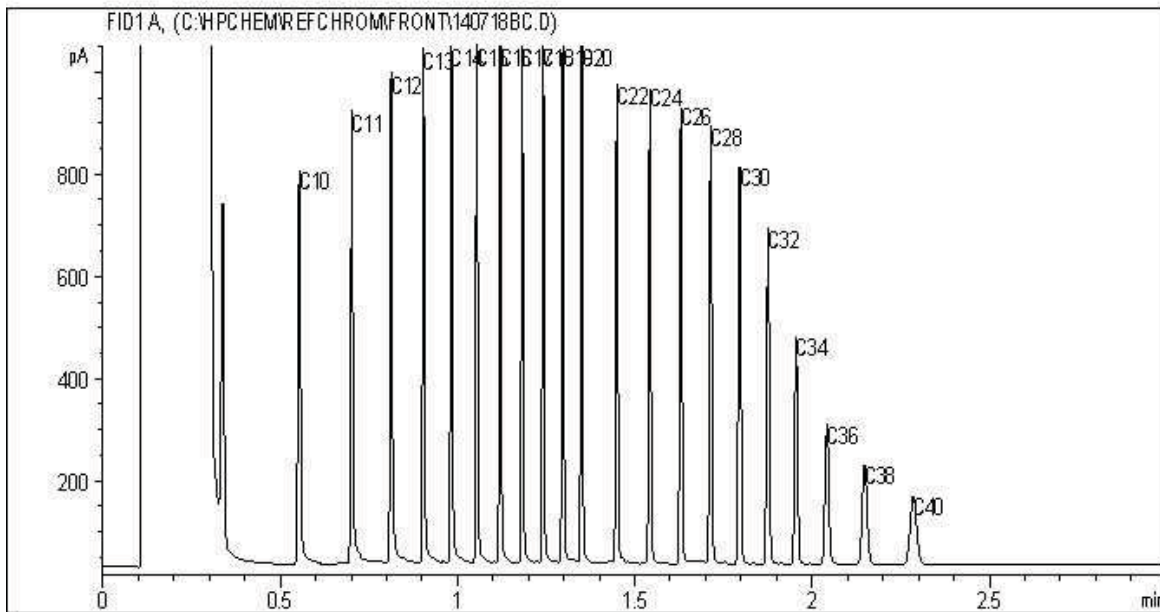
White: Maxxam Yellow: Client

19, 20, 22

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram

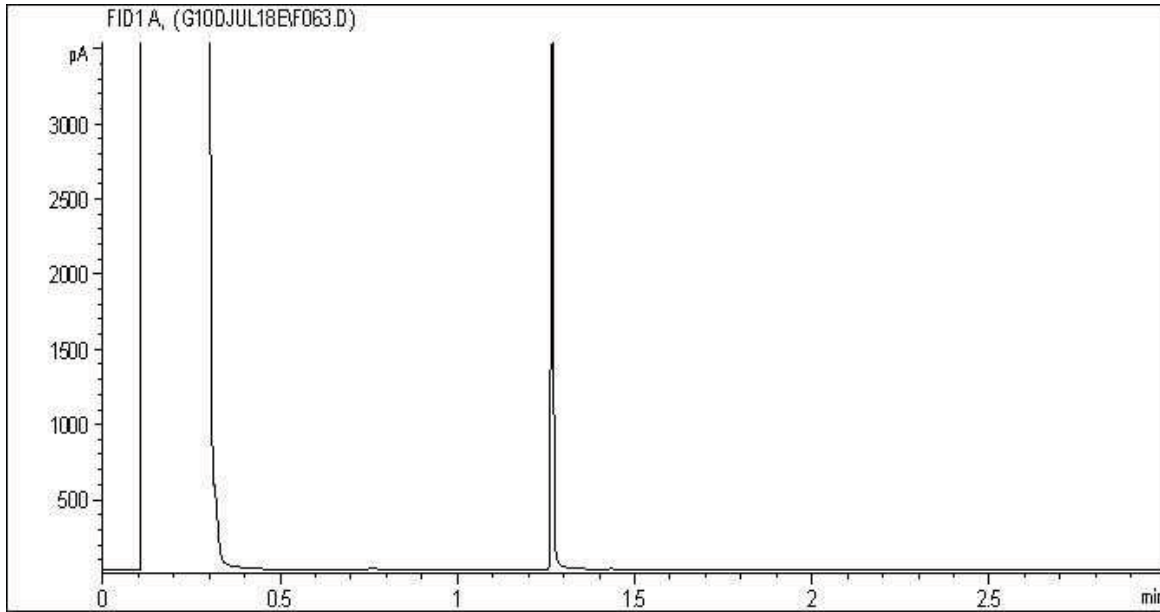


TYPICAL PRODUCT CARBON NUMBER RANGES

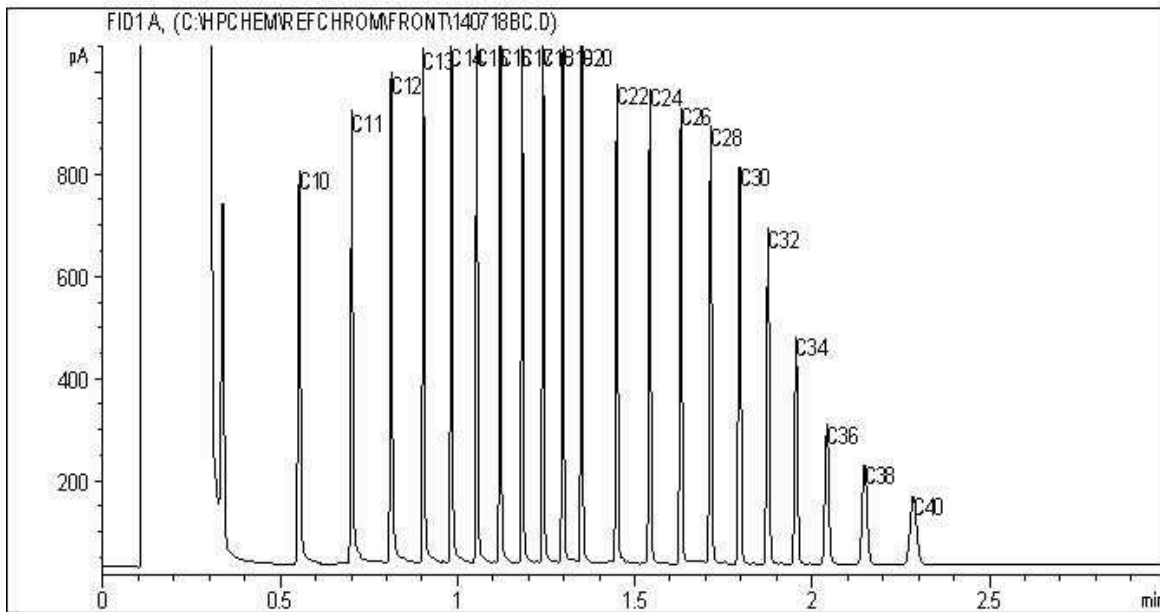
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram

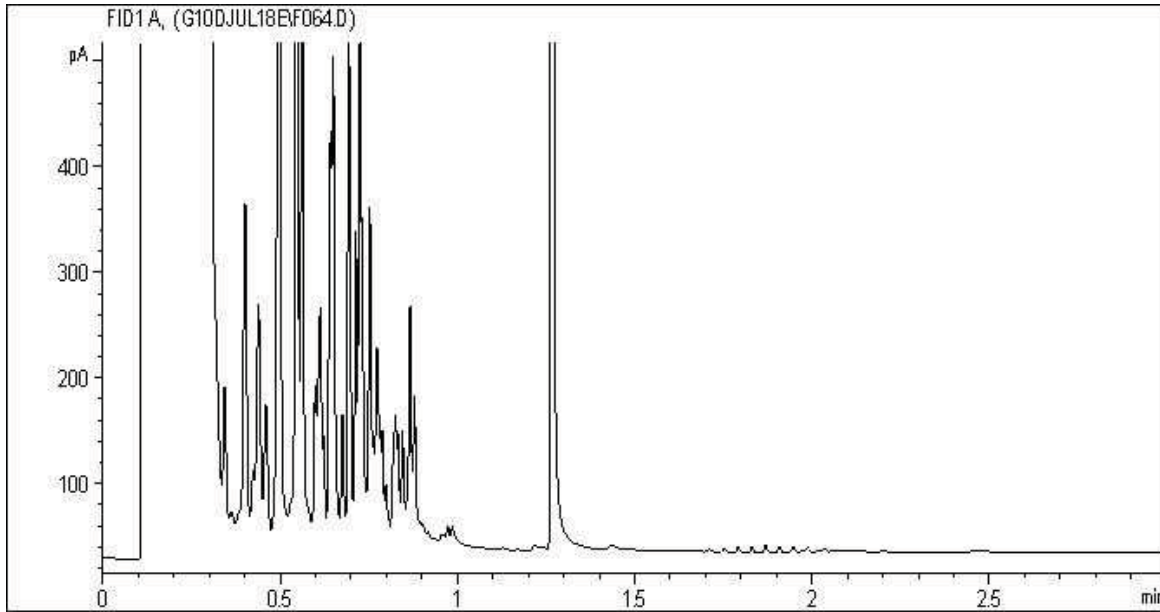


TYPICAL PRODUCT CARBON NUMBER RANGES

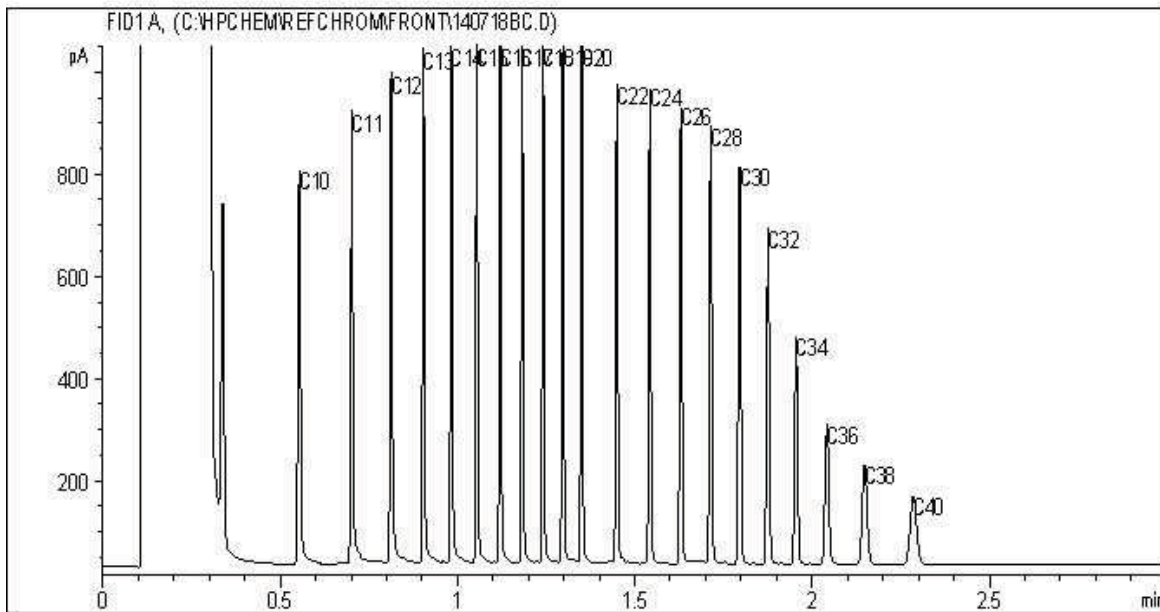
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram

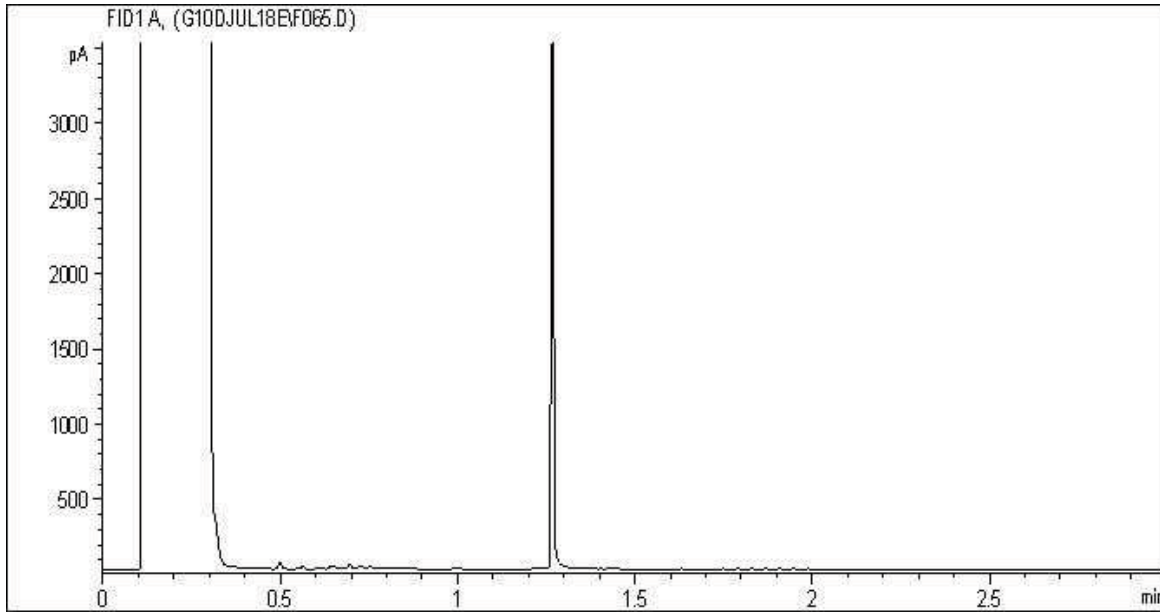


TYPICAL PRODUCT CARBON NUMBER RANGES

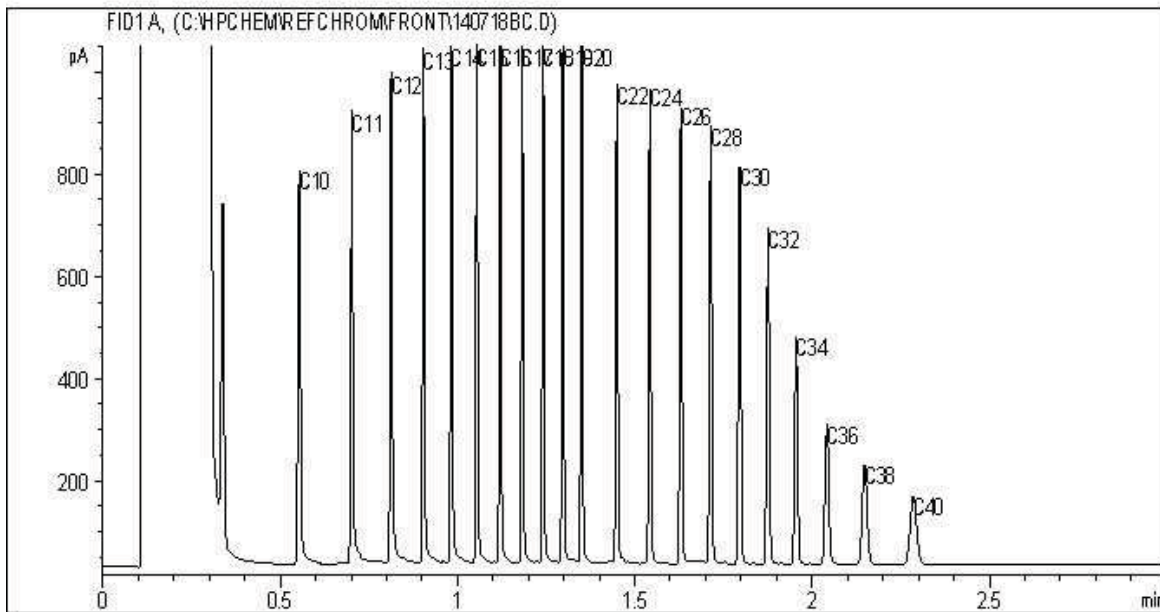
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram

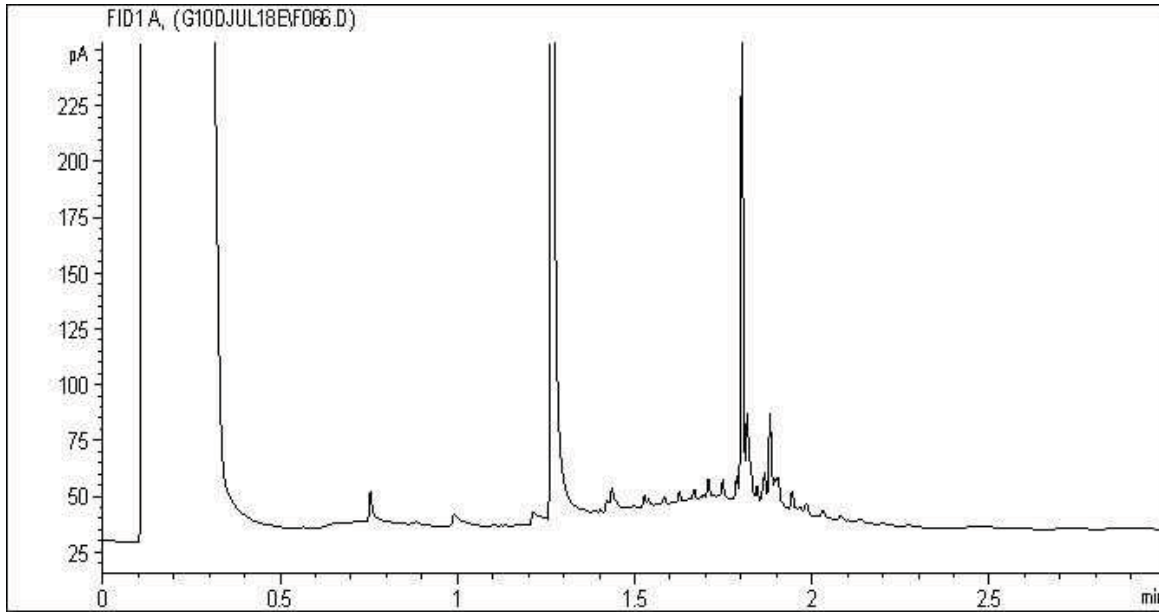


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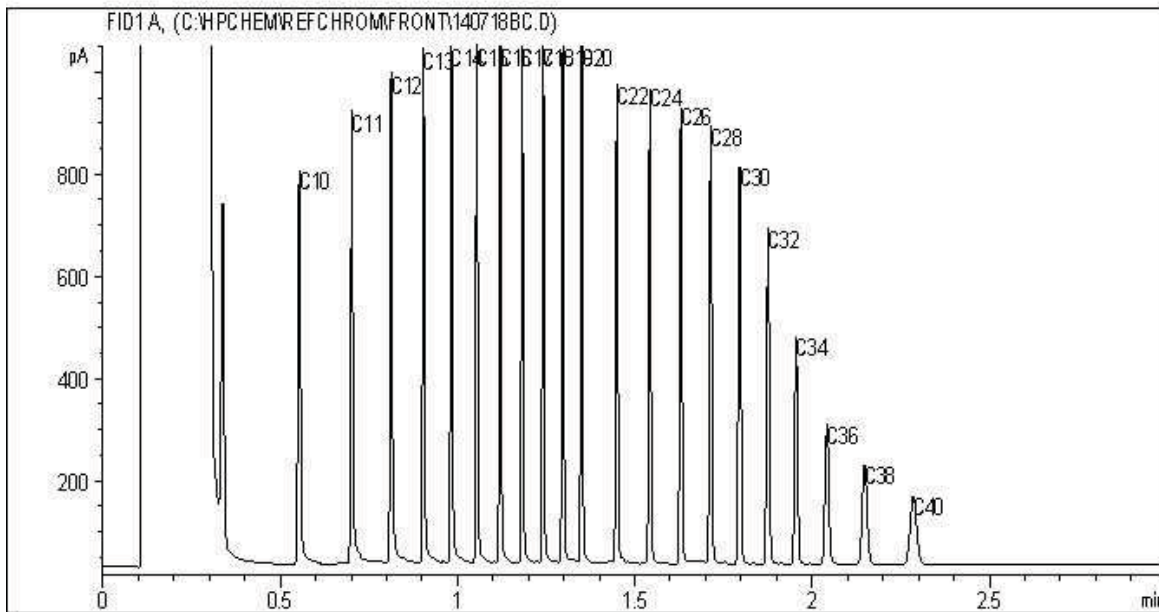
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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram

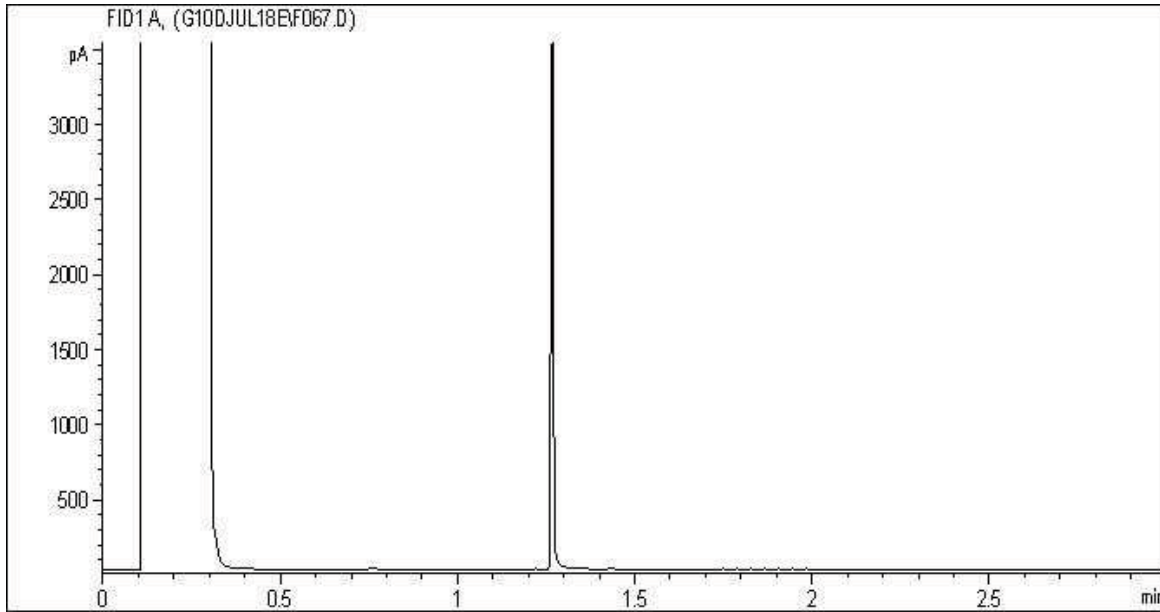


TYPICAL PRODUCT CARBON NUMBER RANGES

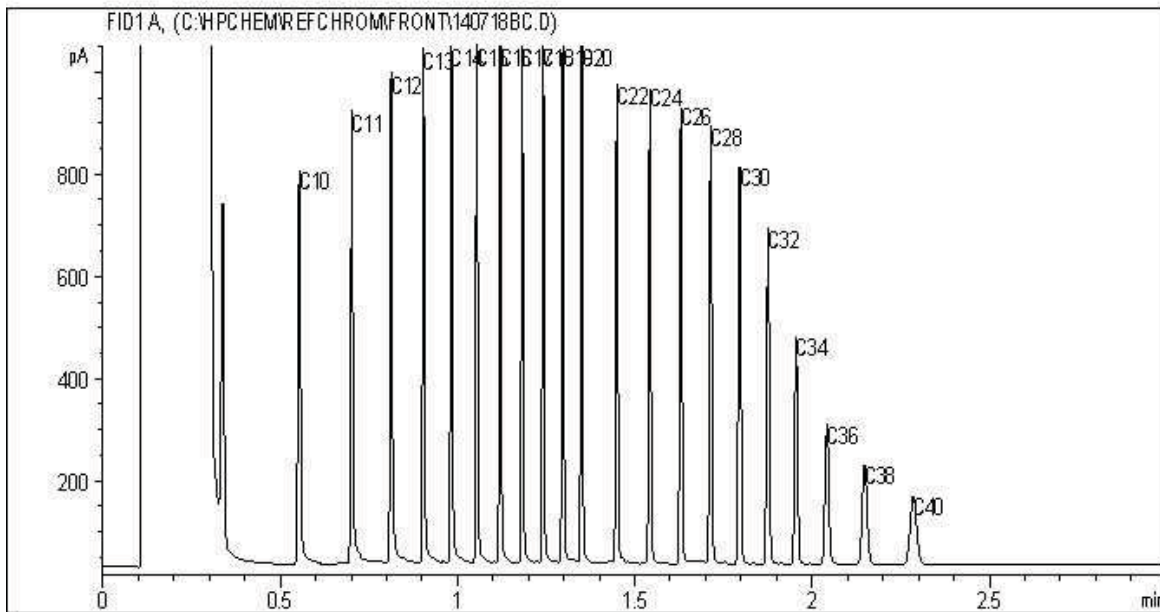
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Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

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Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram

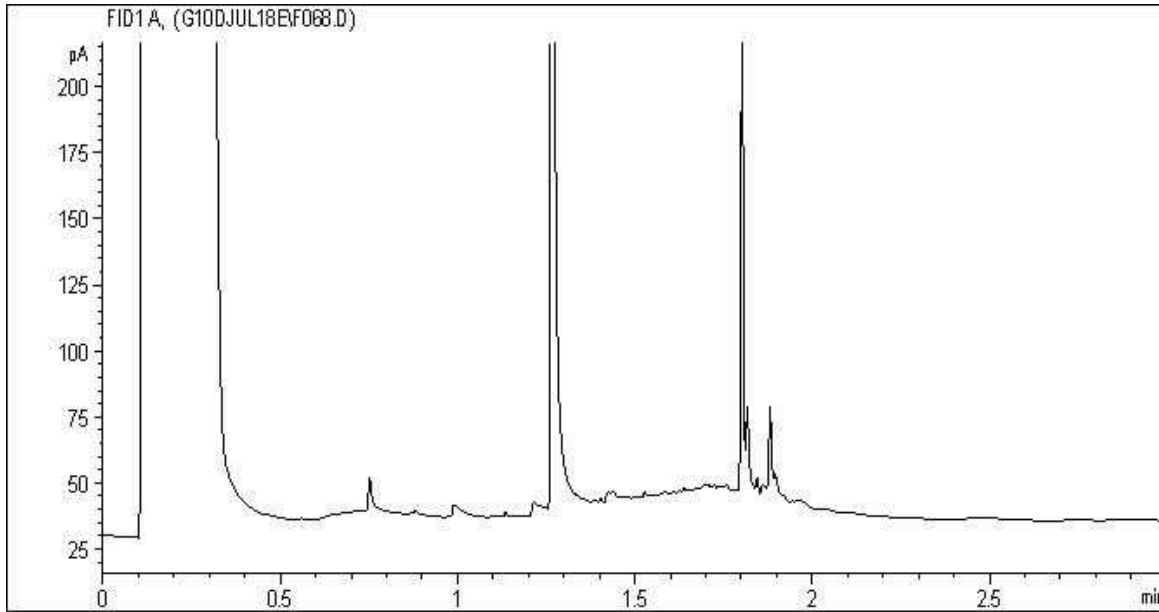


TYPICAL PRODUCT CARBON NUMBER RANGES

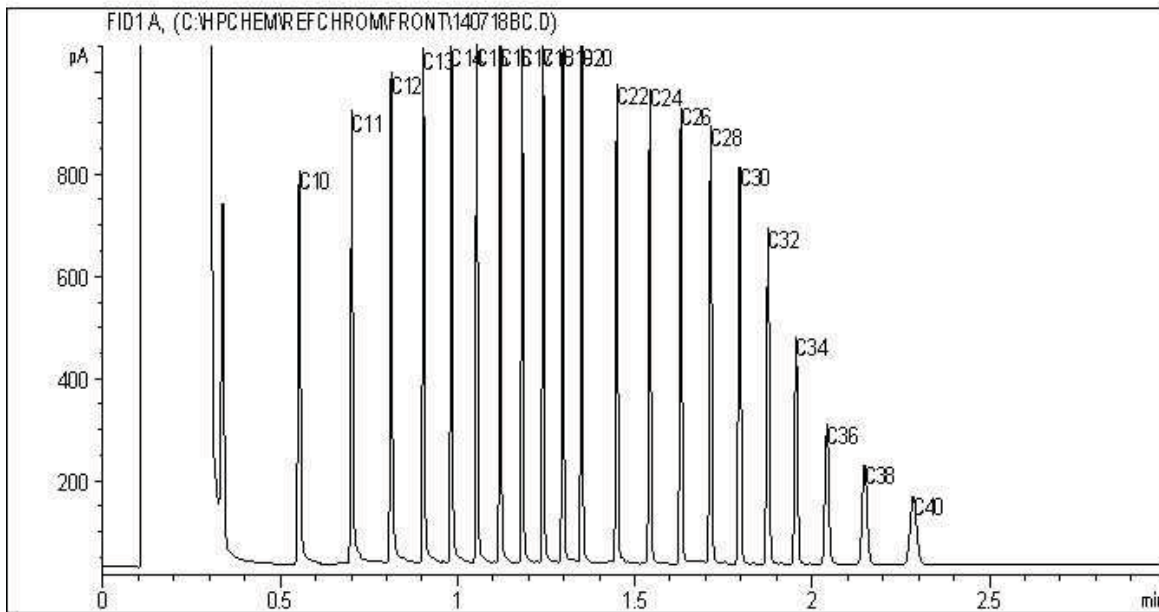
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Extrac. Pet HC when LEPH/HEPH required Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

**KEYSTONE ENVIRONMENTAL LTD.
GENERAL TERMS AND CONDITIONS FOR SERVICES**



KEYSTONE ENVIRONMENTAL LTD.
GENERAL TERMS AND CONDITIONS FOR SERVICES

The terms and conditions set forth below govern all work or services requested by CLIENT as described and set forth in the Proposal and/or Work Plan of Keystone Environmental Ltd. ("Keystone Environmental"), any Purchase Order issued by CLIENT or Agreement between Keystone Environmental and CLIENT. The provisions of said Proposal or Agreement govern the scope of services to be performed, including the time schedule, compensation, and any other special terms. The terms and conditions contained herein shall otherwise apply expressly stated to the contract including any terms in addition to or inconsistent with said Proposal or Agreement.

1. COMPENSATION

The fees for services provided by Keystone Environmental consists of: (1) an hourly billing rate for any staff member actively working on a project, except for lump-sum or percent of construction fee basis projects; (2) reimbursement of direct expenses; (3) reimbursement of subcontractor's and other special costs; and (4) use and rental charges for equipment. Invoices covering these charges and expenses will be submitted for payment on a monthly basis, unless other arrangements have been agreed upon in writing.

All time, including traveling hours, spent on the project by Keystone Environmental personnel will be invoiced. Overtime incurred by and paid to personnel may be invoiced at a rate of 1.2 times the hours worked, if so stipulated in the proposal and/or work plan. Unless a lump-sum bid is submitted or percent of construction fee basis used, any cost estimate presented in the proposal and/or work plan is for budgetary purposes only and is not a fixed lump-sum bid. If it becomes apparent that the budgetary estimate is not sufficient to complete the project in a satisfactory manner, the client will be advised before the budgetary estimate is exceeded.

REIMBURSABLE EXPENSES

(a) The following expenses will be invoiced at cost plus 15% to cover overhead:

- (i) Travel expenses including airfare, rental vehicles, personal vehicles at \$0.54/km for less than 5,000 kms and \$0.48/km for 5,000 kms and over, subsistence and lodging.
- (ii) Shipping/storage charges and costs for expendable sampling and field supplies.
- (iii) Communications costs, including telephone and mailing costs including courier services.
- (iv) All project-related purchases including subcontractor costs, laboratory charges, material fees, duties, deposits, equipment purchases, third party equipment rentals and other outside costs incurred specifically for the project.

(b) The following expenses will be invoiced at the rates which follow:

- (i) Field and reproduction equipment in accordance with our Equipment Rate Schedule.
- (ii) Photocopying at \$ 0.15 per copy.
- (iii) Engineering and specialty software services will be invoiced at \$20.00/connect hour as stipulated in the proposal and/or work plan

GST/HST paid on expenses and disbursements by Keystone Environmental is not included in invoiced costs. GST/HST will be added to all invoices other than invoices sent to GST/HST exempt Clients

Payment shall be provided by money transfer, cheque, or, if with prior approval by Keystone Environmental, MasterCard or Visa. A surcharge of 3% may be added to payments by MasterCard or Visa if the payment amount exceeds \$3,000.00. Fees shall be paid in advance if stipulated in the proposal and/or work plan. Where payment in advance is not stipulated in the proposal and/or work plan, progress invoices will be issued monthly and are to be paid within 30 days of the invoice date. Subcontractor billings are payable upon presentation. A finance charge of 1.5% per month (19.6% per annum) may be charged on past due accounts. Payment of Keystone Environmental invoices shall be in Canadian currency.

CLIENT agrees to compensate Keystone Environmental in accordance with the total fee as stipulated in Keystone Environmental's proposal and/or work plan.

Keystone Environmental may, at its sole discretion, withhold work products at any time that accounts are past due and until accounts are paid in full. Keystone Environmental may also, at its sole discretion, stop work at any time accounts are past due.

In the event that Keystone Environmental shall take collection or legal action for the recovery of the payment of outstanding accounts, Keystone Environmental shall be entitled to recover all collection and legal fees and expenses incurred by it with respect to such action.



2. **INDEPENDENT CONTRACTOR**

Keystone Environmental shall be an independent contractor and shall be fully independent in performing the services of work and shall not act or hold themselves out as an agent, servant or employee of CLIENT.

3. **KEYSTONE ENVIRONMENTAL'S LIMITED WARRANTY**

The sole and exclusive warranty which Keystone Environmental makes with respect to the services to be provided in the performance of the work is that they shall be performed in accordance with generally accepted professional practices.

In the event Keystone Environmental's performance of work, or any portion thereof, fails to conform to the above stated limited warranty, Keystone Environmental shall, at its discretion and its expense, proceed expeditiously to repertory the nonconforming, or upon the mutual agreement of the parties, refund the amount of compensation paid to Keystone Environmental for such nonconforming work. In no event shall Keystone Environmental be required to bear the cost of gaining access in order to perform its warranty obligations.

4. **CLIENT WARRANTY**

CLIENT warrants that: it will provide to Keystone Environmental all available information regarding the site, including underground structures and utilities, facilities, buildings, and land involved with the work and that such information shall be true and correct and that it has title to or will provide right of entry or access to all property necessary to perform the work. The Client shall provide all licenses and permits required for the work, unless otherwise stated in the proposal and/or work plan,

5. **INDEMNITY**

a. Subject to the limitations of Section 7 below, Keystone Environmental agrees to indemnify, defend and hold harmless CLIENT (including its officers, directors, employees and agents) from and against any and all losses, damages, liabilities, claims, suits, and the costs and expenses incident thereto (including reasonable legal fees and reasonable costs of investigation) which any or all of them may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction or damage to any property, private or public, contamination or adverse effects on the environment or any violation or alleged violation of governmental laws, regulations, or orders, to the extent caused by or arising out of: (i) Keystone Environmental's errors or omissions or (ii) negligence on the part of Keystone Environmental in performing services hereunder.

b. CLIENT agrees to indemnify and hold harmless Keystone Environmental (including its officers, directors, employees and agents) from and against any and all losses, damages, liabilities, claims, suits and the costs and expenses incident thereto (including legal fees and reasonable costs of investigation) which any or all of them may hereafter incur, become responsible for or pay out as a result of death or bodily injuries to any person, destruction or damage to any property, private or public, contamination or adverse effects on the environment or any violation or alleged violation of governmental laws, regulations, or orders, caused by, or arising out of in whole or in part: (i) any negligence or willful misconduct of CLIENT, (ii) any breach of CLIENT of any warranties or other provisions hereunder, (iii) any condition including, but not limited to, contamination existing at the site, or (iv) contamination of other property arising or alleged to arise from or be related to the site provided, however, that such indemnification shall not apply to the extent any losses, damages, liabilities or expenses result from or arise out of: (i) any negligence or willful misconduct of Keystone Environmental; or (ii) any breach of Keystone Environmental of any warranties hereunder.

6. **LIMITATION OF LIABILITY**

Keystone Environmental's total liability, whether arising from or based upon breach of warranty, breach of contract, tort, including Keystone Environmental's negligence, strict liability, indemnity or any other cause of basis whatsoever, is expressly limited to the limits of Keystone Environmental's insurance coverage. This provision limiting Keystone Environmental's liability shall survive the termination, cancellation or expiration of any contract resulting from this Proposal and the completion of services thereunder. After three (3) years of completion of Keystone Environmental's services, any legal costs arising to defend third party claims made against Keystone Environmental in connection with the project defined in the Proposal or Agreement will be paid in full by the CLIENT.

7. **INSURANCE**

Keystone Environmental, during performance of this Agreement, will at its own expense carry Worker's Compensation Insurance within limits required by law; Comprehensive General Liability Insurance for bodily injury and for property damage; Professional Liability Insurance for errors omissions and negligence; and Comprehensive Automobile Liability Insurance for bodily injury and property damage. At CLIENT'S request, Keystone Environmental shall provide a Certificate of Insurance demonstrating Keystone Environmental's compliance with this section. Such Certificate of Insurance shall provide that said insurance shall not be cancelled or materially altered until at least ten (10) days after written notice to CLIENT.



8. **CONFIDENTIALITY**

Each party shall retain as confidential all information and data furnished to it by the other party which relate to the other party's technologies, formulae, procedures, processes, methods, trade secrets, ideas, improvements, inventions and/or computer programs, which are designated in writing by such other party as confidential at the time of transmission and are obtained or acquired by the receiving party in connection with work or services performed subject to this Proposal or Agreement, and shall not disclose such information to any third party.

However, nothing herein is meant to prevent nor shall it be interpreted as preventing either Keystone Environmental or CLIENT from disclosing and/or using said information or data; (i) when the information or data is actually known to the receiving party before being obtained or derived from the transmitting party; or (ii) when the information or data is generally available to the public without the receiving party's fault; or (iii) where the information or data is obtained or acquired in good faith at any time by the receiving party from a third party who has the right to disclose such information or data; or (iv) where a written release is obtained by the receiving party from the transmitting party; or (v) as required by law.

9. **PROTECTION OF INFORMATION**

Keystone Environmental specifically disclaims any warranties expressed or implied and does not make any representations regarding whether any information associated with conducting the work, including the report, can be protected from disclosure in responses to a request by a federal, provincial or local government agency, or in response to discovery or other legal process during the course of any litigation involving Keystone Environmental or CLIENT. Should Keystone Environmental receive such request from a third party, it will immediately advise CLIENT.

10. **FORCE MAJEURE**

Neither party shall be responsible or liable to the other for default or delay in the performance of any of its obligations hereunder (other than the payment of money for services already rendered) caused in whole or in part by strikes or other labour difficulties or disputes; governmental orders or regulations; war, riot, fire, explosion; acts of God; acts of omissions of the other party; any other like causes; or any other unlike causes which are beyond the reasonable control of the respective party.

In the event of delay in performance due to any such cause, the time for completion will be extended by a period of time reasonably necessary to overcome the effect of the delay. The party so prevented from complying shall within a reasonable time of its knowledge of the disability advise the other party of the effective cause, the performance suspended or affected and the anticipated length of time during which performance will be prevented or delayed and shall make all reasonable efforts to remove such disability as soon as possible, except for labour disputes, which shall be solely within said party's discretion. The party prevented from complying shall advise the other party when the cause of the delay or default has ended, the number of days which will be reasonably required to compensate for the period of suspension and the date when performance will be resumed. Any additional costs or expense accruing or arising from the delaying event shall be solely for the account of the CLIENT.

11. **NOTICE**

Any notice, communication, or statement required or permitted to be given hereunder shall be in writing and deemed to have been sufficiently given when delivered in person or sent by facsimile, wire, or certified mail, return receipt requested, postage prepaid, to the address of the party set forth below, or to such address for either party as the party may be written notice designate.

12. **ASSIGNMENT/SUBCONTRACT**

Neither party hereto shall assign this Agreement or any part thereof nor any interest therein without the prior written approval of the other party hereto except as herein otherwise provided. Keystone Environmental shall not subcontract the performance of any work hereunder without the written approval of CLIENT. Subject to the foregoing limitation, the Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of the parties hereto.

13. **ESTIMATES**

To the extent the work requires Keystone Environmental to prepare opinions of probable cost, for example, opinions of probable cost for the cost of construction, such opinions shall be prepared in accordance with generally accepted engineering practice and procedure. However, Keystone Environmental has no control over construction costs, competitive bidding and market conditions, costs of financing, acquisition of land or rights-of-way and Keystone Environmental does not guarantee the accuracy of such opinion of probable cost as compared to actual costs or contractor's bid.



14. **DELAYED AGREEMENTS AND OBLIGATIONS**
 The performance by Keystone Environmental of its obligations under this Agreement depends upon the CLIENT performing its obligations in a timely manner and cooperating with Keystone Environmental to the extent reasonably required for completion of the Work. Delays by CLIENT in providing information or approvals or performing its obligations set forth in this Agreement may result in an appropriate adjustment of contract price and schedule.
15. **CONSTRUCTION PHASE**
 To the extent the work is related to or shall be followed by construction work not performed by Keystone Environmental, Keystone Environmental shall not be responsible during the construction phase for the construction means, methods, techniques, sequences or procedures of construction contractors, or the safety precautions and programs incident thereto, and shall not be responsible for the construction contractor's failure to perform the work in accordance with the contract documents. Keystone Environmental will not direct, supervise or control the work of the CLIENT'S contractors or the CLIENT'S subcontractors.
16. **DOCUMENTATION, RECORDS, AUDIT**
 Keystone Environmental when requested by CLIENT, shall provide CLIENT with copies of all documents relating to the service(s) of work performed. Keystone Environmental shall retain true and correct records in connection with each service and/or work performed and all transactions related thereto and shall retain all such records for twelve (12) months after the end of the calendar year in which the last service pursuant to this Agreement was performed. CLIENT, at its expense and upon reasonable notice, may from time to time during the term of this Agreement, and at any time after the date the service(s) were performed up to twelve (12) months after the end of the calendar year in which the last service(s) were performed, audit all records of Keystone Environmental in connection with all costs and expenses which it was invoiced.
17. **REPORTS, DOCUMENTS AND INFORMATION**
 All field data, field notes, laboratory test data, calculations, estimates and other documents prepared by Keystone Environmental in performance of the work shall remain the property of Keystone Environmental. If required as part of the work, Keystone Environmental shall prepare a written report addressing the items in the work plan including the test results. Such report shall be the property of CLIENT, Keystone Environmental shall be entitled to retain one hard copy and electronic copy of such report for its internal use and reference.
- Reports will be delivered to the client in electronic (PDF) format.
- All drawings and documents produced under the terms of this Agreement are the property of Keystone Environmental, and cannot be used for any reason other than to bid and construct the project as described in the Proposal or Agreement.
18. **LIMITED USE OF REPORT**
 Any report prepared as part of the work will be prepared solely for the internal use of CLIENT. Unless otherwise agreed by Keystone Environmental and CLIENT, parties agree that third parties are not to rely upon the report.
19. **SAMPLE MANAGEMENT**
 Ownership of all samples obtained by Keystone Environmental from the project site is maintained by the CLIENT. Keystone Environmental or its laboratory sub-contractor will store such samples in a professional manner in a secure area for the period of time necessary to complete the project. Upon completion of the project, Keystone Environmental disposes of the samples in a lawful manner.
20. **ACKNOWLEDGMENT AND RECOGNITION OF RISK**
 CLIENT recognizes and accepts the work to be undertaken by Keystone Environmental may involve unknown undersurface conditions and hazards. CLIENT further recognizes that environmental, geologic, hydrological, and geotechnical conditions can and may vary from those encountered by Keystone Environmental at the times and locations where it obtained data and information and that limitations on available data may result in some uncertainty with respect to the interpretation of these conditions. CLIENT recognizes that the performance of services hereunder or the implementation of recommendations made by Keystone Environmental in completing the work required may alter the existing site conditions and affect the environment in the site area.

Unknown undersurface conditions, including underground utility services, tanks, pipes, cables and other works (Underground Works) may be present at the site. Keystone Environmental will conduct utility locates to obtain available information regarding the location of Underground Works in accordance with industry practice. Utility locates are not a guarantee of the location of, or existence of, Underground Works and as a result damage to Underground Works may occur. Keystone Environmental relies on utility locates and Client provided "as-built" and record drawings to determine the location and existence of Underground



Works. CLIENT recognizes that the use of utility locates is not a guarantee or warranty that Underground Works may not be damaged and acknowledges that Keystone Environmental is not responsible for any damage caused to Underground Works or the repair of such damage or any resulting or related damage and any costs related to such damage.

21. DISPOSAL OF CONTAMINATED MATERIAL

It is understood and agreed that Keystone Environmental is not, and has no responsibility as, a generator, operator or storer of pre-existing hazardous substances or wastes found or identified at work sites. Keystone Environmental shall not directly or indirectly assume title to such hazardous or toxic substances and shall not be liable to third parties.

CLIENT will indemnify and hold harmless Keystone Environmental from and against all incurred losses, damages, costs and expenses, including but not limited to attorneys' fees, arising or resulting from actions brought by third parties alleging or identifying Keystone Environmental as a generator, operator, storer or owner of pre-existing hazardous substances or wastes found or identified at work sites.

22. SUSPENSION OR TERMINATION

In the event the work is terminated or suspended by CLIENT prior to the completion of the services contemplated hereunder, Keystone Environmental shall be paid for: (i) the services rendered to the date of termination or suspension, (ii) the demobilization costs, and (iii) the costs incurred with respect to non-cancelable commitments.

23. GOVERNING LAW

This Agreement shall be governed by and interpreted pursuant to the laws of the Province of British Columbia.

24. HEADINGS AND SEVERABILITY

Any heading preceding the text of sections hereof is inserted solely for convenience or reference and shall not constitute a part of the Agreement and shall not affect the meanings, context, effect or construction of the Agreement. Every part, term or provision of this Agreement is severable from others. Notwithstanding any possible future finding by duly constituted authority that a particular part, term or provision is invalid, void or unenforceable, this Agreement has been made with the clear intention that the validity and enforceability of the remaining parts, terms and provision shall not be affected thereby.

25. ENTIRE AGREEMENT

The terms and conditions set forth herein constitute the entire Agreement and understanding of the parties relating to the provision of work or services by Keystone Environmental to CLIENT, and merges and supersedes all prior agreements, commitments, representation, writings, and discussions between them and shall be incorporated in all work orders, purchase orders and authorization unless otherwise so stated therein. The terms and conditions may be amended only by written instrument signed by both parties.





UNDERGROUND STORAGE TANK REMOVAL/DECOMMISSIONING REPORT

This report must be completed and submitted to the City of Vancouver (Environmental Contamination Team) after completion of underground storage tank (UST) removal projects.

1. Site Information:

Owner's Name: 458 Prior Street Holdings Ltd.

Site Address: 458 Prior Street, Vancouver, BC

2. Excavation Plan:

A scaled (about 1:200) plan including (at minimum): north arrow, nearby buildings, tank location, extents of excavation, soil sample location, and soil sample analytical results summary.

3. Site Photos (electronic only) Attached:

The photos must include the tank-hold excavation and the removed tank.

4. Tank Information:

Was oil removed from tank? Y

Was all associated (e.g., feed lines, venting) piping removed? Y N

Tank Summary Table:

Permit #	Capacity (L)	Perforation(s)		Other visible physical damage (e.g. pipe damage)		Product in tank	Date tank removed from service (YYYY/MM/DD)
		Yes	No	Yes	No		
E1411932	13,000 L	No		No		approx 520 L of gas and water	2015/02/03

5. Tank and Piping Disposal/Recycling:

Name/address of tank and piping disposal/recycling receiver: ABC Recycling, 3081 Meadow Avenue, Burnaby, BC

Tank disposal/recycling receipts attached: Y

6. Liquid Waste Disposal:

Liquid/sludge disposal (e.g., type/volume/class): Mix of water and gasoline, approx 520 L

Receiver name/address: Sumas Bioremediation Facility, 4623 Byrne Road, Burnaby, BC

Disposal date (YYYY/MM/DD): 2015/02/03

Liquid Waste Disposal Receipt/Manifest attached: Y N/A **7. Soil Disposal (if applicable):**Soil volume (m³) disposed: 30 m3Soil disposal carrier: J.S Nijar Trucking Ltd.

Soil receiver information:

Receiver/company name: Sumas Bioremediation FacilityReceiver's address: 4623 Byrne Road, Burnaby, BCSoil relocation agreement required: Y N Disposal date: YY/MM/DD 2015-02-03Soil disposal receipt/manifest attached: Y N **8. Field Observations**

Field-screening (e.g., soil vapour, visual observations, staining) findings summary:

Mild hydrocarbon-like odour observed on southern wall of excavationWas product or contamination suspected of migrating into preferential pathways (e.g., perimeter drains), or beneath buildings? Y N

Comments: _____

Groundwater Observations:

Was water present in the excavation? Y N Was there petroleum hydrocarbon sheen on excavation water? Y N (Comments): slight hydrocarbon-like sheen on groundwater**9. Confirmatory Soil Sampling**Total Number of discrete in-situ soil samples (minimum five: one from each sidewall and the base) analyzed: 5Sampler's name and company: Brian Lennan, Keystone Environmental LtdSample chain of custody and laboratory certificate of analysis attached? Y CALA analytical laboratory name: MaxximLaboratory address: 4606 Canada Way, Burnaby, BCAnalysis/PCOCs (e.g., LEPH/HEPH for heating oil): LEPH/HEPH/PAH/BTEX/VPII/LEAD

10. Ministry of Environment Forms:

Was notice of independent remediation (NIR) completed? Y N/A

Was notice of offsite migration (NOM) required and submitted. Y N/A

Comments: Tank was partially on 456 Prior Street and 410 Prior Street (owned by the City of Vancouver)

11. Conclusion Summary Table

Address	Contractor/ Consultant	Tank Details (L, conditio n)	Liquid Waste Disposal Details	Soil Receiver and m ³ Disposed	Confirmatory Samples Meet Standards (Y/N, PCOCs)	Estimated Volume Residual Contaminatio n (m ³ , N/A)	Offsite Migration (Y/N)	MoE Forms Submitted (i.e., NIR, NOM, N/A)
456 Prior Street	Keystone Environmental Ltd	13,000 L Good	520 L Water and gas	Sumas 30 m ³	No, benzene exceeds IL at 2 walls		Yes	N.R. NOM

12. Name and License of Individual/Firm Who Completed this Report:

Name (company and individual): Nicole MacDonald, P. Ag

Business license number: 15-130-831

Date of tank removal (MM/DD/YYYY): 02/03/15

13. Conclusion Statement:

Please select the appropriate checkmark that accurately reflects site conditions.

"I confirm all information contained in this report is true and accurate. Based on this information, residual soils are less than / (or) exceed , the applicable (select one: residential / commercial / industrial) standards. Contamination is / (or) is not /, suspected or confirmed to have migrated offsite."

Nicole MacDonald, P. Ag

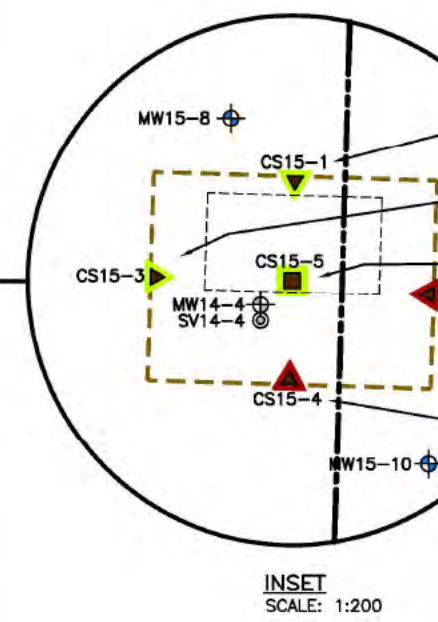
Printed Name



Nicole MacDonald
Signature (with stamp)

April 15, 2015

Date



Sample ID	LEPH	HEPH	PAH	BTEX	VH	VPH	MTBE	Lead	Other Metals
CS15-1	1.8	<100	<100	<RDL	<RDL	<10	<10	<0.1	4.54
CS15-3	1.8	<100	<100	<IL	<IL	<10	<10	<0.1	12.6
CS15-5	2.7	<100	<100	<RDL	<RDL	<10	<10	<0.1	7.8
CS15-2	1.8	<100	<100	<IL	0.08	<0.02	0.22	0.57	<10
CS15-4	1.8	<100	<100	<IL	0.12	0.048	0.29	1.3	56
Duplicate	108	127	<IL	0.1	0.035	0.2	0.78	36	35

INFERRED LOCAL GROUNDWATER FLOW DIRECTION

LEGEND

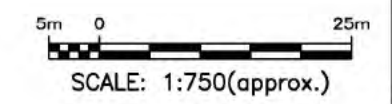
- SITE
- BUILDING OUTLINE
- FORMER BUILDING/STRUCTURES
- FORMER RAIL SPUR
- FORMER CREEK
- FORMER HIGH WATER MARK
- () FORMER ADDRESS
- 370 LISTED ON BCMOE SITE REGISTRY
- ⊕ DESTROYED KEYSTONE MONITORING WELL
- ⊙ KEYSTONE MONITORING WELL (2014 & 2015)
- ⊗ DESTROYED KEYSTONE SOIL VAPOUR WELL
- ⊙ KEYSTONE SOIL VAPOUR WELL (2014)
- LIMIT OF KEYSTONE REMEDIAL EXCAVATION (2/03/15)
- KEYSTONE CONFIRMATORY BASE SAMPLE
- ▲ KEYSTONE CONFIRMATORY WALL SAMPLE
- SOIL CONCENTRATION(S) LESS THAN CSR STANDARDS (IL)
- △ SOIL CONCENTRATION(S) GREATER THAN CSR STANDARDS (IL)
- LEPH LIGHT EXTRACTABLE PETROLEUM HYDROCARBONS
- HEPH HEAVY EXTRACTABLE PETROLEUM HYDROCARBONS
- PAH POLYCYCLIC AROMATIC HYDROCARBONS
- BTEX BENZENE, TOLUENE, ETHYLBENZENE & XYLENE
- VH VOLATILE HYDROCARBONS
- VPH VOLATILE PETROLEUM HYDROCARBONS
- MTBE METHYL TERTIARY BUTYL ETHER
- < LESS THAN
- <RDL REPORTED DETECTION LIMIT
- NOT ANALYZED
- IL CSR INDUSTRIAL LAND USE STANDARD
- SAMPLE I.D. --- ANALYTE

Sample ID	LEPH	HEPH	PAH	BTEX	VH	VPH	MTBE	Copper	Lead	Zinc	Other Metals
MW14-2	1.5	<100	<100	<IL	-	-	-	-	-	<IL	-
MW14-4	1.5	197	292	<IL	0.85	0.095	2.5	3.8	210	200	-
MW15-10	1.8	<100	111	<IL	0.31	0.075	0.028	0.81	<10	<10	<IL
MW15-9	1.5	1070	124	<IL	2	0.97	97	330	2200	1000	<0.1
MW14-1	0.6	<100	<100	<RDL	-	-	-	-	-	<IL	-
MW14-5	0.6	<100	120	<IL	-	-	-	-	285	318	409
Duplicate	<100	<100	<IL	-	-	-	-	-	214	520	307
MW14-8	0.8	<100	153	<IL	-	-	-	-	435	<IL	-
MW14-7	3.1	<100	<100	<RDL	-	-	-	-	-	<IL	-

NOTES:
 1. Sample values are presented as Micrograms per gram (µg/g) [parts per million (ppm)].
 2. Sample Exceeding CSR (IL) Standard in **DARK RED**.



NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY. LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
 2. AIR PHOTO DATE IS 2011.



370 & 456 Prior Street
 Vancouver, B C
 456 Prior Street Holdings Ltd.
 REVISION No. 00 DATE Mar. 2015 PROJECT No. 12349-14

Figure 1
 Soil Analytical Results

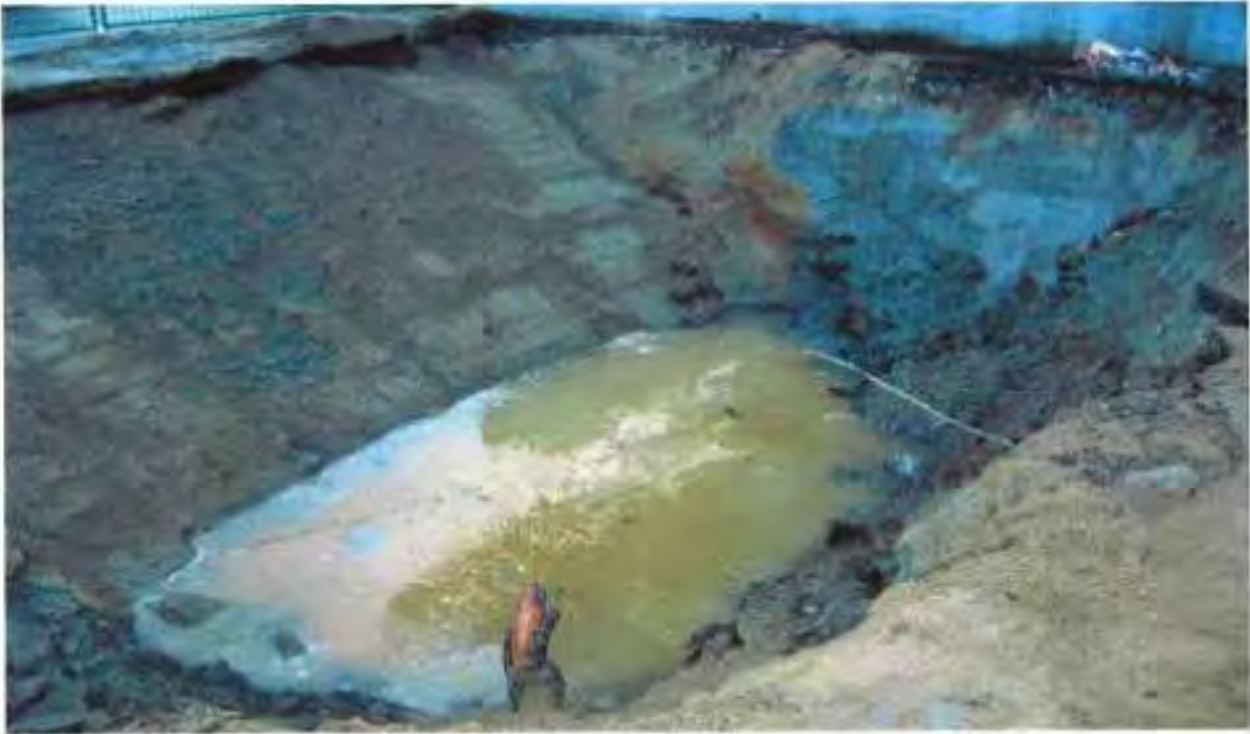


Photo 1 – Excavation after underground fuel storage tank removed.



Photo 2 – Fuel storage tank after removal from ground. 5.3 m long by 1.5 m diameter



**SUMAS
REMEDATION**

SOIL ARRIVAL FORM

	Metals	HC
RL+		
CL+		X
Other		

Project Number: **14-1005-300**

Scale Ticket



1544429 00-0273015

Living Balance Investments Site Location: 456 Prior Street
 4th Floor, 52A Powell Street Vancouver

Vancouver, BC
 504,215.0801 Site Phone No: 604-374-8187

Hydrocarbon Contaminated Soil

Driver Name: _____ Signature: [Signature] Shipment Date: 3 Feb 15

ER	Tandem	
	Truck & Pony	X
	Truck & Trailer	

NIJAR TRUCKING LTD

Truck No: 104
 or: HM9545

17,000 kg

3 Feb 2015
 Shipment Date

Commodity: _____

Customer: _____

Signature: _____



SUMAS
REMEDIATION

SOIL ARRIVAL FORM

	Metals	HC
RL+		
CL+		X
Other		

Project Number: **14-1005-300**

Section A GENERATOR

Generator Name: Living Balance Investments Site Location: 456 Prior Street
 Generator Address: 4th Floor, 52A Powell Street Vancouver
Vancouver, BC
 Generator Phone No. 604.216.0801 Site Phone No. 604-374-8187

Description of Waste: Hydrocarbon Contaminated Soil
 Generator's Representative Name: Brian Leman Signature: [Signature] Shipment Date: 2015 Feb 3

Section B TRANSPORTER

TRANSPORTER Tandem Truck & Pony Truck & Transfer
 Name: J S NIDJAN
 Address: _____
 Driver Name/Title: _____
 Phone No: _____ Truck No. 104
 Vehicle License No./Prov: HM9S45
 Driver Signature: _____ Shipment Date: _____



Section C FACILITY

Burnaby (Sumas) Bioremediation Facility
 4623 Bysna Road, Burnaby, BC
 Receiver Comments: _____
 Location: _____
 Name of Authorized Agent: _____ Signature: [Signature]

Commodity: _____
 Customer: _____
 Signature: _____

Western Scale Co. Ltd. (604) 941-3474 www.westernscale.ca



SUNLAS
REMEDICATION

SOIL ARRIVAL FORM

	Metals	HC
RL*		
CL*		X
Other		

Project Number: **14-1005-300**

Section A GENERATOR

Generator Name: Living Balance Investments Site Location: 456 Prior Street
 Generator Address: 4th Floor, 52A Powell Street Vancouver
Vancouver, BC
 Generator Phone No: 604.216.0801 Site Phone No: 604.374.8187

Description of Waste: Hydrocarbon Contaminated Soil

Brian Thomas [Signature] 2/25/15
 Generator's Representative Name Signature Shipment Date

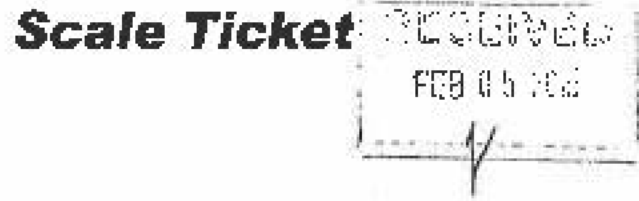
Section B TRANSPORTER

TRANSPORTER	
Tandem Truck & Pony	<input type="checkbox"/>
Truck & Transfer	<input checked="" type="checkbox"/>

Name: J.S. NIJAR TRUCKING LTD
 Address: _____

Driver Name/Title: _____
 Phone No.: _____ Truck No. 102
 Vehicle License No./Prov. FA 2300

[Signature] 3 Feb 2015
 Driver Signature Shipment Date



Section C FACILITY

Burnaby (Sunas) Bioremediation Facility
 4623 Byrne Road, Burnaby, BC
 Receiver Comments: _____

Location:

Name of Authorized Agent _____ Signature _____

Commodity: _____

Customer: _____

Signature: _____

TRANSNET CARRIER LTD

7458 - 125A Street, Surrey BC V3W 0R4

CELL: 804-728-8110

PH: 804-599-1064

FAX: 804-599-8984

E-mail: info@transnetcarrier.com

Regular () Collect ()
Special () Prepaid ()

STRAIGHT BILL OF LADING
- NOT NEGOTIABLE

23042

Date FEB 3/15

FROM	NAME	JOB SITE	TO	NAME	SUMAS REDEMPTION
	ADDRESS	456 PRIOR ST		ADDRESS	4723 BYBONE RD
	CITY	VAN		CITY	BBY

TERMS AND CONDITIONS: Conditions of Carriage as prescribed by regulations of the Province of B.C. respecting Motor Carrier Services are hereby incorporated by reference and govern transportation services performed under this Bill of Lading.

ORIGIN TO:	ORDER NO.	14-1005-300	C.O.D.:
------------	-----------	-------------	---------

NO. OF PCEs	DESCRIPTION	WEIGHT	TIME	FOR CARRIER'S USE ONLY			
				SMALL FLAT	LARGE FLAT	WAX	INSURANCE
32 HRS 1	20' CONTAINER EMPTY USED OIL	5000	START				FREIGHT
							ADVANCE
							C.O.D.
			FINISH				INSURANCE
							OVERTIME
							GST
							TOTAL

Signed Shipper's Agent

RECEIVED IN GOOD ORDER EXCEPT WHERE NOTED

CARRIED BY
RATED
F

Carrier's liability shall not exceed \$2.50 unless greater value is declared and paid for
S.T. # 881146066970001

CITY OF VANCOUVER

DATE ISSUED NOVEMBER 21, 2014		PERMIT TYPE FIRE PREVENTION DIVISION PERMIT				PERMIT NUMBER P FI 411932	
LEGAL DESCRIPTION LT B BLK 2 SL 7989 DL 181 NWD TO PLAN 7989 (cont'd)					ADDRESS 456 PRIOR ST		
APPLICANT CONTRACTOR SUMAS REMEDIATION SERVICES INC 224 990 HARBOURSIDE DRIVE N VANCOUVER BC V7P 3T2					CONTACT PROPERTY OWNER		
APPLICATION DATE NOV 21, 2014	PURPOSE REMOVAL	PROJECT VALUE	INDUSTRY	HAZARDOUS	STATUS	CLASS	
TEMPORARY PERMIT TYPE		TEMPORARY USE DATES		STATUS			
TEL: 604-697-4123	AUSLICENCE NO: 551036	TEL: 604-675-7333	INDUSTRY CATEGORY	TEL: 604-675-7333	EQUIPMENT CERTIFICATE		
PURSUANT TO THE FIRE BY-LAW, THE FOLLOWING WORK IS HEREBY AUTHORIZED:							
TO REMOVE 1 TANK ON SITE. CAPACITY 4000 L. SETBACK NOT AVAIL. BOTTOM OF TANK 2.4M.							
PERMIT CONDITIONS AND NOTES							
<p>1) ALL WORK UNDER THIS PERMIT IS AUTHORIZED PURSUANT TO THE FIRE BY-LAW</p> <p>2) For removal, the tanks, together with connected piping and dispensing equipment, shall have all combustibles or flammable liquids removed. The tanks and piping must be removed from the ground and placed on skids. The pipe ends must be permanently sealed by capping or plugging.</p> <p>3) Tank removal must comply with subsection 4.16.3 of the Vancouver Fire By-law.</p> <p>4) Construction must be carried out in compliance with the provisions of Noise Control by Law No. 6555.</p> <p>5) This permit shall expire if:</p> <ul style="list-style-type: none"> a) all work authorized by this permit has not commenced within 90 days from the date of issuance, or b) work has been substantially discontinued for a period of 90 days. <p>6) The premises shall be kept in safe manner with guards, warning, etc. as required by the Occupational Health and Safety Regulation and city by-law.</p> <ul style="list-style-type: none"> 1) Environmental Final Cleanup Report and clearance required 2) Backfill with clean soil required 3) Underground storage tank removal shall be done in accordance with good engineering practice 4) Contractor must be on site for the inspection by the Vancouver Fire and Police Services 							
ITEM	SPECIFICATIONS/REFERENCE	QTY/AMT	ITEM	APPROPRIATE/REFERENCE	QTY/AMT		
010	ONE TANK	01					
APPROVALS REQD BEFORE PERMIT IS COMPLETED INCLUDE :			ENVIRONMENTAL FIRE INSPECTION				
			Jrg. Evans 4-604-675-7333				
ADDITIONAL NOTES:							
<p>1) Do not call on inspection call 3-1-1 from within Vancouver or 604-675-7333 from outside Vancouver. The 3-1-1 Centre is open 7 days a week from 1AM to 10PM, 365 days a year. Please call 24 hour Outgoing Inspections Booking request message line at 604-675-7333. For information on how to use it, please contact the 3-1-1 Centre.</p>							
<p>1. DO ARRANGE FOR REQUIRED INSPECTIONS. CALL THE 3-1-1 CENTRE OR 604-675-7333.</p> <p>2. THE PERMIT HOLDER SHALL BE RESPONSIBLE FOR ARRANGING ACCESS TO THE PREMISES FOR THE INSPECTOR</p> <p>3. FOR INFORMATION ON LIMITATION OF TIMES OF WORK IN WHICH NOISE IS CREATED, SEE THE NOISE CONTROL BY LAW NO 6555 OR CALL THE 3-1-1 CENTRE OR 604-675-7333.</p>							
ISSUED BY	DATE	ISSUED BY	DATE	SIGNED BY			SUMAS REMEDIATION SERVICES INC
				DATE			SEE PERMIT
				ISSUED BY			J WONG
				FOR THE			FIRE CHIEF
INVOICE :			TOTAL				

PS010101 REVISED FEBRUAR



Ministry of
Environment

NOTIFICATION OF INDEPENDENT REMEDIATION

Land Remediation Section
PO Box 9342 Stn Prov Govt
Victoria B.C. V8Y 9M1
Telephone: (250) 387-4441
Fax: (250) 387-9995

Section 54 (2) of the Environmental Management Act requires anyone undertaking independent remediation to notify the Director of Waste Management in writing promptly on initiating remediation and within 90 days of completing it. You must complete this form and send it to the e-mail or mailing address below to inform the ministry when independent remediation of your site begins and ends.

A site plan (may be obtained from some local government web sites) and a Land Title record must be included with your submission.

Section I Timing of Remediation

Check the following items as applicable. This notice is given for

- Initiation of independent remediation Completion of independent remediation
- Both initiation and completion of independent remediation
- Completion of remediation resulting from a spill. Estimated date of spill:

Incident Report (DGIR) #

YYYY-MM-DD

Provide the following if you are sending us a *Notification of Initiation of Independent Remediation*

Start date Estimated completion date Estimated duration
YYYY-MM-DD YYYY-MM-DD (Days)

Scope of remediation: Whole site Part of site

If you expect that remediation of the entire site will take longer than one year attach a remediation schedule.

Provide the following if you are sending us a *Notification of Completion of Independent Remediation*:

Start date: 2015-02-02 Completion date: 2015-06-25
YYYY-MM-DD YYYY-MM-DD

Section II Land Description

Site ID Number (if known)

PID 010 292 209 or PIN

Legal Description
(or metes & bounds) Lot B, Blocks 2 To 7, 9 and 20 District Lots 181, 196 and 2037 Plan 7989

Latitude Degrees 49 Minutes 16 Seconds 34.8

Longitude Degrees 123 Minutes 5 Seconds 41.3

Site Civic Address or Location Street 456 Prior Street

(i.e. nearest roadway)

City Vancouver

Postal Code V6A 2E5

Section III Property Owner and/or Operator (if applicable)

Name 456 Prior Street Holdings Ltd., Inc No. BC1017782

Address 4th Floor, 52a Powell Street

City Vancouver

Province/State BC

Country Canada

Postal /Zip Code V6A 1E7

Phone

Fax

Section IV Environmental Consultant / Contractor / Agent Contact

Name of Firm: Keystone Environmental
Contact Name: Francini Martins
Address: Street Suite 320 - 4400 Dominion Street
City: Burnaby Province/State: BC
Country: Canada Postal / Zip Code: V5G 4G3
Phone: 604-430-0671 Fax: 604-430-0672

Section V Primary Land Use

Contaminated Sites Regulation land use classification at the site surface (check one)

- Industrial Commercial Residential Urban park Agricultural Wildlands

Description of current operation (e.g., service station) Warehouse

Is a change in zoning or land use expected?

- Change in zoning Change in land use

From _____ To _____

Section VI Confirmed or Suspected Source of Contamination (e.g. leaking underground storage tank)

- Underground storage tank (UST)
 Oil and gas industry operations
 Other (describe): Fill material

Section VII Submission of Other Required Forms

Was a Notification of Likely or Actual Migration also submitted for this site?

- No Yes If Yes, date of submission 2015-02-03
YYYY-MM-DD

Was a Site Risk Classification Report also submitted for this site?

- No Yes If Yes, date of submission 2015-01-30
YYYY-MM-DD

If No, please describe the exemption which applies:

Section VIII Soil Investigations and Remediation

The following contaminants Were found Are suspected

List contaminants (and maximum concentrations if known). Attach additional information if not enough space.

Ethylbenzene = 97 ug/g VH = 2,200 ug/g Copper = 2,160 ug/g
Xylenes = 330 ug/g VH = 1,800 ug/g Zinc = 1,210 ug/g

Was the soil investigated following requirements and guidance under the Act? Yes No

Soil remediation strategy

Excavation and disposal Other (describe)

Approximately 630 m³ of soil were excavated and transported off-Site to Sumas Remediation facility in Burnaby, BC.

Remediation standards used: Numerical Risk-based Both

Section IX Groundwater and Surface Water Investigations and Remediation

The following contaminants Were found Are suspected Not applicable

List contaminants (and maximum concentrations if known). Attach additional information if not enough space.

LEPH = 4,000 ug/L Naphthalene = 190 ug/L VPH = 3400 ug/L

Was the water investigated following requirements and guidance under the Act? Yes No

Water remediation strategy

Pumping and disposal Other (describe): excavation

An area of approximately 240 m² was excavated and the wet soils transported to Sumas Remediation facility in Burnaby, BC. The groundwater contamination was remediated via the soils excavation and confirmatory groundwater samples were less than the CSR AW standards.

Remediation standards used: Numerical Risk-based Both

Section X Sediment Investigations and Remediation

The following contaminants Were found Are suspected Not applicable

List contaminants (and maximum concentrations if known). Attach additional information if not enough space.

Was the sediment investigated following requirements and guidance under the Act? Yes No

Sediment remediation strategy

Excavation and disposal Other (describe)

(include volume and intended treatment and/or disposal location for contaminated sediments if managed away from the site)

Remediation standards used: Numerical Risk-based Both

Section XI Vapour Investigations and Remediation

The following contaminants Were found Are suspected Not applicable

List contaminants (and maximum concentrations if known) – The following exceedances were identified via modelling from soil or groundwater. Attach additional information if not enough space.

Naphthalene BTEX/VPH 1,2 Dibromoethane 1,2 Dichloroethane 1,3-Butadiene

Was the vapour investigated following requirements and guidance under the Act? Yes No

Attenuated post confirmatory samples were less than the CSR CLUL standards.

Vapour remediation strategy: Physical remediation in conjunction with soil and groundwater excavation

Remediation standards used: Numerical Risk-based Both

Section XII Reason for Remediation

Construction Demolition Upgrade

Other: Due diligence

Section XIII Authorizations for Discharges to the Environment

Did or does a discharge associated with the remediation require an authorization under the Act? Note that contravention of the requirements for an authorization is an offence and may be subject to penalties.

Yes No Don't know

Provide the authorization numbers under the *Environmental Management Act* for any air, effluent and soil discharges to the environment for treatment works located at the site and the date of any related Contaminated Soil Relocation Agreement. Consult [Administrative Guidance 9, "Independent Remediation of Contaminated Sites"](#) for advice. Note that the *in situ* treatment of contaminants may generate substances which could be deemed a waste requiring a discharge authorization, even though there is no end-of-the-pipe discharge from the site.

Authorization numbers

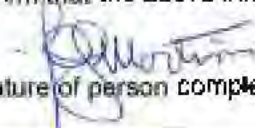
Contaminated soil relocation agreement date

Section XIV Additional Comments

A portion of the remediation was conducted on-site. The hydrocarbon contamination associated with the former on-site UST migrated to the adjacent City of Vancouver 410 Prior Street property. Therefore, a portion of the remediation occurred on the 410 Prior Street property as per the notification of off-site migration submitted on 2015-02-03.

Section XV Signature

I confirm that the above information is true based on my knowledge as of the date this notification form was completed.


Signature of person completing form

Francini Osses Martins

Printed name

2015-07-20

Date completed (YYYY-MM-DD)

Sign your completed Notification of Independent Remediation form and include the following:

Site plan Land Title record

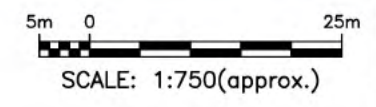
Send the package to:
Site Information Advisor
Ministry of Environment
PO Box 9342 Stn Prov Govt
Victoria B.C. V8W 5M1
Fax (250) 387-9935
E-mail: Advisor.SiteInformation@gov.bc.ca

For further information, please refer to the information under our [key topic website on independent remediation](#).



- LEGEND**
- SITE
 - - - - - PORTION OF CITY OF VANCOUVER PROPERTY INCLUDED AS PART OF THE SITE FOR THE REMEDIAL EXCAVATION
 - BUILDING OUTLINE
 - - - - - FORMER BUILDING/STRUCTURES
 - ##### FORMER RAIL SPUR
 - FORMER CREEK
 - - - - - FORMER HIGH WATER MARK
 - () FORMER ADDRESS
 - 310 LISTED ON BCMOE SITE REGISTRY
 - ▲ KEYSTONE BOREHOLE (2015)
 - ⊕ KEYSTONE MONITORING WELL (2014 & 2015)
 - ⊙ KEYSTONE SOIL VAPOUR WELL (2014 & 2015)

NOTES:
 1. THIS DRAWING IS FOR GENERAL INFORMATION ONLY.
 LOT BOUNDARIES AND FEATURES ARE APPROXIMATE.
 2. AIR PHOTO DATE IS 2011.



370 & 456 Prior Street Vancouver, B C		
456 Prior Street Holdings Ltd.		
REVISION No. 00	DATE July 2015	PROJECT No. 12349-14

Figure 1
Sample Location Plan

TITLE SEARCH PRINT

File Reference: 12349

2015-03-17, 12:29:43

Requestor: Matt Cuddeford

****CURRENT INFORMATION ONLY - NO CANCELLED INFORMATION SHOWN****

Land Title District

Land Title Office

VANCOUVER

VANCOUVER

Title Number

From Title Number

CA4203913

BB1117483

Application Received

2015-01-28

Application Entered

2015-02-05

Registered Owner in Fee Simple

Registered Owner/Mailing Address:

456 PRIOR STREET HOLDINGS LTD., INC.NO. BC1017782
4TH FLOOR, 52A POWELL STREET
VANCOUVER, BC
V6A 1E7

Taxation Authority

CITY OF VANCOUVER

Description of Land

Parcel Identifier:

010-292-209

Legal Description:

LOT B BLOCKS 2 TO 7, 9 AND 20 DISTRICT LOTS 181, 196 AND 2037 PLAN 7989

Legal Notations

NOTICE OF INTEREST, BUILDERS LIEN ACT (S.3(2)), SEE CA4203914
FILED 2015-01-28

Charges, Liens and Interests

Nature:

EASEMENT AND INDEMNITY AGREEMENT

Registration Number:

301095M

Registration Date and Time:

1959-11-02 14:18

Registered Owner:

CITY OF VANCOUVER

Nature:

MORTGAGE

Registration Number:

CA4204157

Registration Date and Time:

2015-01-28 11:56

Registered Owner:

CMLS FINANCIAL LTD.
INCORPORATION NO. BC0124226

Remarks:

INTER ALIA

TITLE SEARCH PRINT

2015-03-17, 12:29:43
Requestor: Matt Cuddeford

File Reference: 12349

Nature:	ASSIGNMENT OF RENTS
Registration Number:	CA4204158
Registration Date and Time:	2015-01-28 11:56
Registered Owner:	CMLS FINANCIAL LTD. INCORPORATION NO. BC0124226
Remarks:	INTER ALIA

Duplicate Infeasible Title NONE OUTSTANDING

Transfers NONE

Pending Applications NONE

APPENDIX B

DW APPLICABILITY SUPPORTING DOCUMENTS

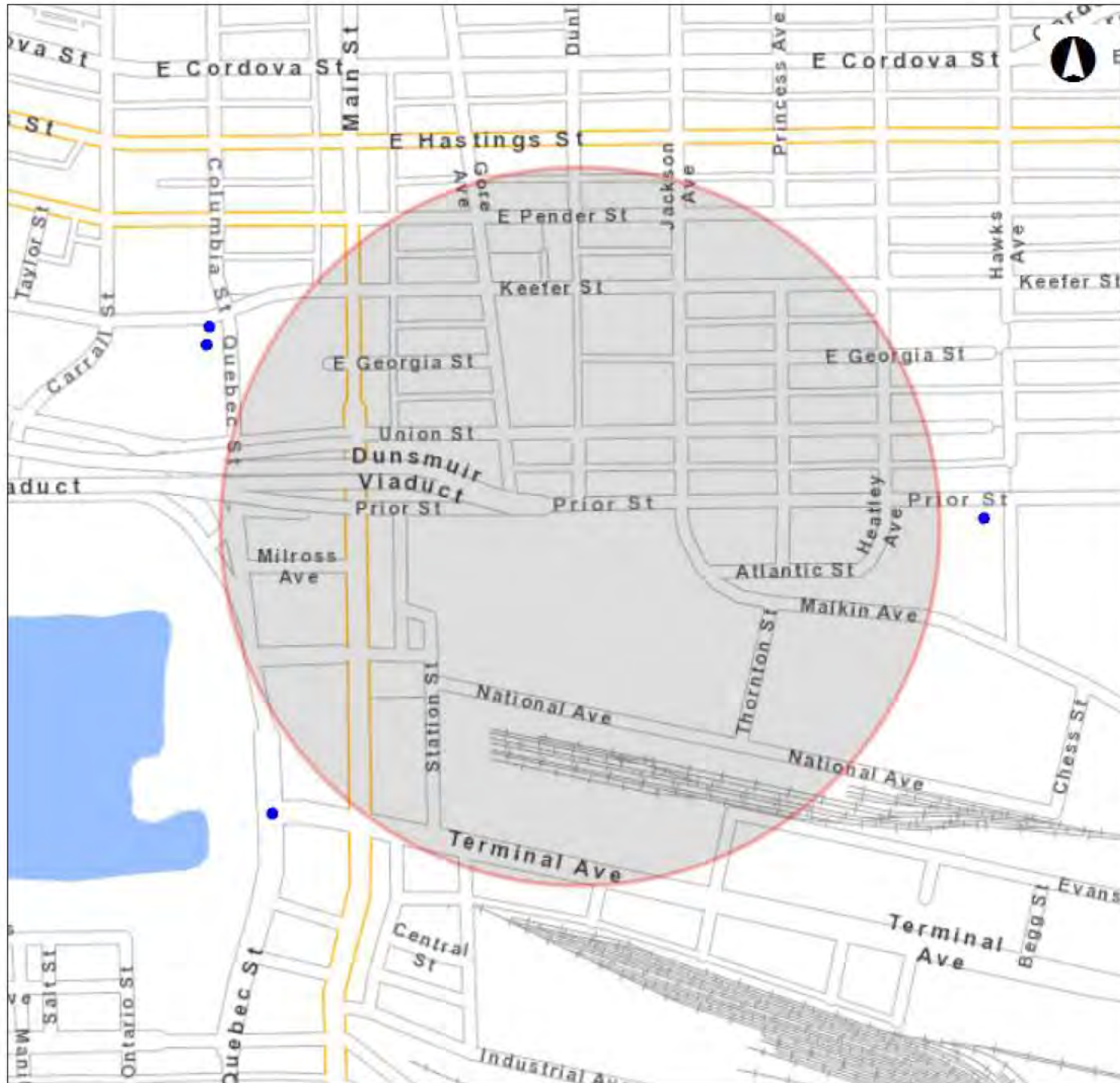


456 Prior Street



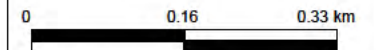
Fri Jul 17 2015 07:45:20 AM.





12349 - Water Resources
Atlas
Legend

- Aquifer Boundary - Outlined
- Artesian Wells
- Water Wells
- TileCache



1: 8,000

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Datum: NAD83
 Projection: NAD_1983_BC_Environment_Albers

Key Map of British Columbia



MONITORING WELL ID: MW15-19



Well Type: Groundwater Monitoring Well

Project Location: 370, 410, and 456 Prior Street, Vancouver, BC

Drilling Contractor: On-Track Drilling

Drilling Equipment/Method: Split Spoon/Hollow Stem Auger

Well Location: 410 Prior Street

Project Name/No.: 12349

Client: 456 Prior Street Holdings Ltd.

Engineer/Geologist: FOM

Drill Date: June 12, 2015

Page: 1 of 1

Depth (ft/m)	Symbol	Soil / Sediment Description	Sample Type	% Recovery	Sample Analyzed (Y, N)	Sample ID	Elevation (m)	Well Construction	Remarks
0		Ground Surface							
0 to 10	X	Sand (FILL) Grey sand (Sechelt and River sand FILL), moist, dense. Odours and/or staining were not observed.							
10 to 25	•••	Silty SAND Grey-brown silty SAND, trace gravel, moist, medium dense. Odours and/or staining were not observed. Wet at approximately 5.0 m.							
25 to 30	■	SANDSTONE Grey SANDSTONE bedrock. Odours and/or staining were not observed. Weathered and wet from approximately 7.6 m to 8.0 m. Dry at 8.0 m.							
30 to 31		End of Hole							

Co-ordinates:	Well-Borehole Diameter: 15 cm	Depth of Well (TOC): 5.8 m
Date of Water Level: June 17, 2015	Well Casing Diameter: 5 cm	Well Elevation (TOC): 0
Water Level (from TOC): 1.826 m	Well Casing Material: PVC	Well Elevation (Ground): 0
Surveyed Water Elevation (m): 0	Well Screen Slot Size: 0.025 cm	Datum:



Keystone Environmental Ltd.
Suite 320 4400 Dominion St,
Burnaby, B.C. V5G 4G3
(604) 430-0671

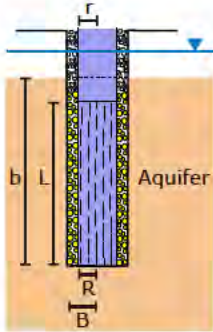
Wells

Project: Prior Street

Number: 12349

Client:

Location: 456 Prior Street



	Name	Penetration	L [m]	B [m]
1	MW15-19	Partially	1.8	0.102



Keystone Environmental Ltd.
 Suite 320 4400 Dominion St,
 Burnaby, B.C. V5G 4G3
 (604) 430-0671

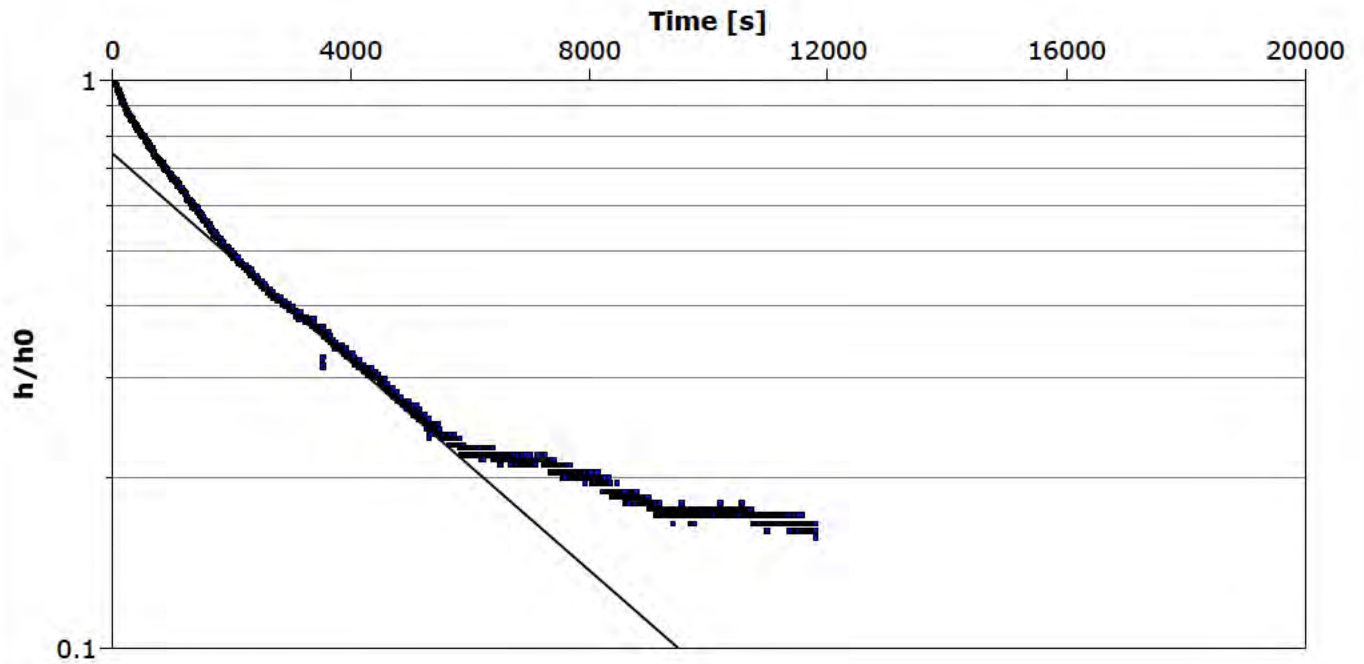
Slug Test Analysis Report

Project: Prior Street

Number: 12349

Client:

Location: 456 Prior Street	Slug Test: MW15-19 Test A	Test Well: MW15-19
Test Conducted by: FOM		Test Date: 6/16/15
Analysis Performed by: FOM/CJP	MW15-19 Test A	Analysis Date: 6/18/15
Aquifer Thickness: 10.00 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]	
MW15-19	1.21×10^{-7}	



Keystone Environmental Ltd.
 Suite 320 4400 Dominion St,
 Burnaby, B.C. V5G 4G3
 (604) 430-0671

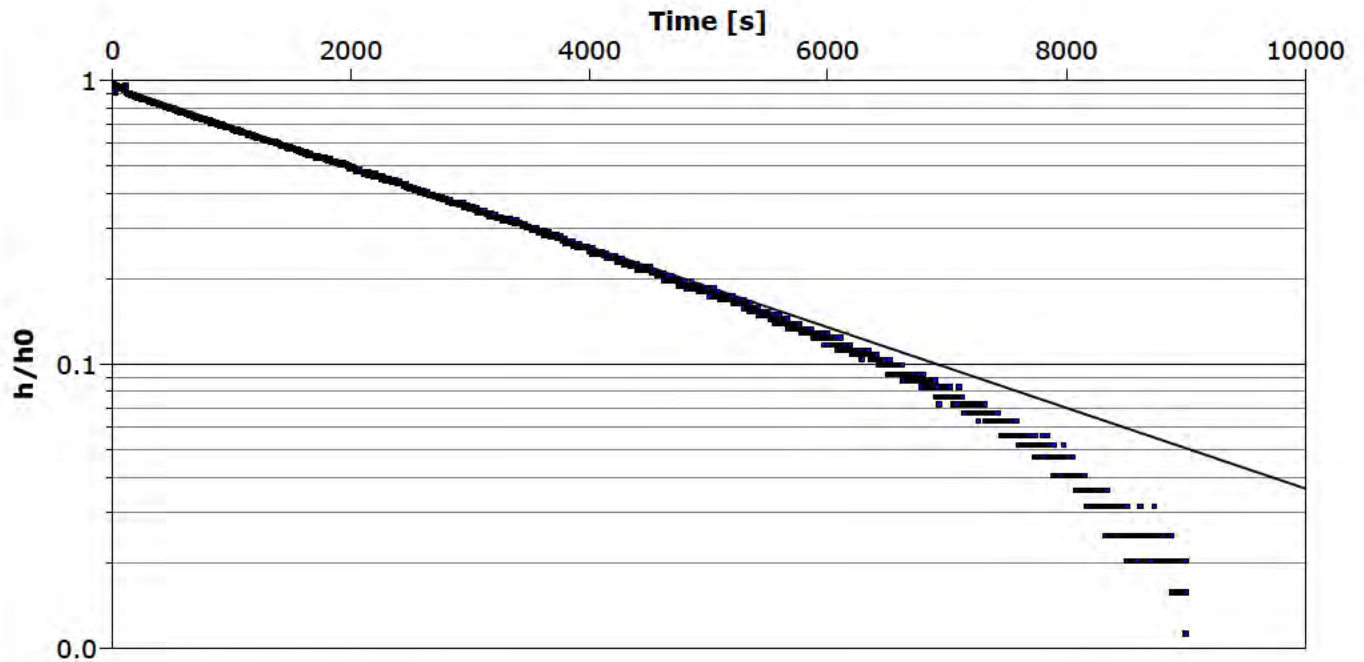
Slug Test Analysis Report

Project: Prior Street

Number: 12349

Client:

Location: 456 Prior Street	Slug Test: MW15-19 Test B	Test Well: MW15-19
Test Conducted by:		Test Date: 6/17/15
Analysis Performed by: FOM/CJP	MW15-19 Test B	Analysis Date: 6/18/15
Aquifer Thickness: 10.00 m		



Calculation using Bouwer & Rice

Observation Well	Hydraulic Conductivity [m/s]	
MW15-19	1.86×10^{-7}	

APPENDIX C
PHOTOGRAPHIC DOCUMENTATION





Photograph 1: View of the former UST area remedial excavation – looking southwest. June 02, 2015.



Photograph 2: View of the fill material quality and wood content – looking east. June 1, 2015.



Photograph 3: Vacuum truck excavation north of CS15-14 (0.8) – looking south. June 25, 2015.



Photograph 4: View of the excavated area during backfilling activities – looking northwest. June 4, 2015.

APPENDIX D
SOIL DISPOSAL SUMMARY



Sumas Remediation Services Summary of Soil Arrival

Project #: 14-1005

Contaminant of Concern: metals

Contaminated Site Address: 456 Prior Street, Vancouver

Analytical: Keystone Environmental

Treatment Facility: Sumas Biocell Burnaby

Contact Information: Nicole Macdonald

Arrival Date	Hour	License Numbers		Weight(KG)			Tracking Form	Weigh Bill #
		Truck	Trailer	Gross	Tare	Total		
1-Jun-15	10:40	CR2171		36,590.00	17,500.00	19,090.00	14-1005-300	83498
1-Jun-15	10:48	BR0273		35,300.00	17,500.00	17,800.00	14-1005-300	83499
1-Jun-15	13:13	BR0273		39,610.00	17,500.00	22,110.00	14-1005-300	83507
1-Jun-15	14:37	BR0273		37,040.00	17,500.00	19,540.00	14-1005-300	83517
1-Jun-15	14:53	DP0150		34,270.00	17,500.00	16,770.00	14-1005-300	83518
1-Jun-15	15:02	BR0273		37,260.00	17,500.00	19,760.00	14-1005-300	83519
1-Jun-15	15:11	CR2171		39,470.00	17,500.00	21,970.00	14-1005-300	83521

Sumas Remediation Services Summary of Soil Arrival

Project #: 14-1005

Contaminant of Concern: metals

Contaminated Site Address: 456 Prior Street, Vancouver

Analytical: Keystone Environmental

Treatment Facility: Sumas Biocell Burnaby

Contact Information: Nicole Macdonald

Arrival Date	Hour	License Numbers		Weight(KG)			Tracking Form	Weigh Bill #
		Truck	Trailer	Gross	Tare	Total		
2-Jun-15	8:41	CR2171		38,750.00	17,500.00	21,250.00	14-1005-300	83525
2-Jun-15	8:47	BR0273		36,810.00	17,500.00	19,310.00	14-1005-300	83526
2-Jun-15	8:59	HL5283		35,570.00	17,200.00	18,370.00	14-1005-300	83527
2-Jun-15	9:06	DP0150		33,640.00	17,500.00	16,140.00	14-1005-300	83529
2-Jun-15	10:39	CR2171		40,150.00	17,500.00	22,650.00	14-1005-300	83534
2-Jun-15	10:47	BR0273		37,380.00	17,500.00	19,880.00	14-1005-300	83535
2-Jun-15	10:57	HL5283		37,690.00	17,200.00	20,490.00	14-1005-300	83537
2-Jun-15	11:02	DP0150		37,340.00	17,500.00	19,840.00	14-1005-300	83538
2-Jun-15	11:36	DD8337		38,900.00	17,500.00	21,400.00	14-1005-300	83540
2-Jun-15	12:11	CR2171		39,220.00	17,500.00	21,720.00	14-1005-300	83543
2-Jun-15	12:29	HC5283		35,710.00	17,200.00	18,510.00	14-1005-300	83545
2-Jun-15	12:45	DP0150		36,060.00	17,500.00	18,560.00	14-1005-300	83546
2-Jun-15	12:49	BR0273		39,140.00	17,500.00	21,640.00	14-1005-300	83547

Sumas Remediation Services Summary of Soil Arrival

Project #: 14-1005

Contaminant of Concern: metals

Contaminated Site Address: 456 Prior Street, Vancouver

Analytical: Keystone Environmental

Treatment Facility: Sumas Biocell Burnaby

Contact Information: Nicole Macdonald

Arrival Date	Hour	License Numbers		Weight(KG)			Tracking Form	Weigh Bill #
		Truck	Trailer	Gross	Tare	Total		
2-Jun-15	14:11	CR2171		40,260.00	17,500.00	22,760.00	14-1005-300	83554
2-Jun-15	15:30	DD8337		40,110.00	17,500.00	22,610.00	14-1005-300	83563
2-Jun-15	15:32	BR0273		35,810.00	17,500.00	18,310.00	14-1005-300	83564
2-Jun-15	15:52	HC5283		38,070.00	17,200.00	20,870.00	14-1005-300	83566
2-Jun-15	16:10	DP0150		37,440.00	17,500.00	19,940.00	14-1005-300	83568
2-Jun-15	16:17	CR2171		37,990.00	17,500.00	20,490.00	14-1005-300	83569
2-Jun-15	17:16	FA2800		40,590.00	17,500.00	23,090.00	14-1005-300	83571
3-Jun-15	15:12	CR2171		42,540.00	17,500.00	25,040.00	14-1005-300	83602
3-Jun-15	15:33	CR2171		36,010.00	17,500.00	18,510.00	14-1005-300	83605

Sumas Remediation Services Summary of Soil Arrival

Project #: 14-1005

Contaminant of Concern: metals

Contaminated Site Address: 456 Prior Street, Vancouver

Analytical: Keystone Environmental

Treatment Facility: Sumas Biocell Burnaby

Contact Information: Nicole Macdonald

Arrival Date	Hour	License Numbers		Weight(KG)			Tracking Form	Weigh Bill #
		Truck	Trailer	Gross	Tare	Total		
4-Jun-15	9:19	CR2171		42,690.00	17,500.00	25,190.00	14-1005-300	83610
4-Jun-15	9:53	BR0273		38,230.00	17,500.00	20,730.00	14-1005-300	83614
4-Jun-15	12:43	BR0273		41,810.00	17,500.00	24,310.00	14-1005-300	83620
4-Jun-15	14:10	CR2171		33,010.00	17,500.00	15,510.00	14-1005-300	83629
25-Jun-15	12:23	HC3031		29,360.00	26,870.00	2,490.00	14-1005-300	84161

Project Total:

676,650.00 Kg

676.65 Tonnes

APPENDIX E

WELL DEVELOPMENT AND PURGE AND SAMPLE FORMS



Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW14-1 Project #/Name: 12108-02
 Location: 456 Pine St. Vancouver Client: LC Kus
 Sampler: Z. Leman

WELL INFORMATION

Well Cover Type: Flush Stick-up Lock No-lock Well Casing: 2-inch (51 mm) Diameter or other:
 Screened Interval (m): 0-91 Well Head Vapour Reading: 2.2 ppm or %LEL RFI Eagle MiniRae Other:

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: 22/11/14 Weather: Sunny + 22°C
 Depth to Bottom of Well from TOC (X): 264 metres
 Depth to Water from Top of Casing (Y): 0.65 metres
 Depth to Product (if applicable): ? metres
 Length of Water Column (X-Y): 1.99 metres
 Volume of Water in Well = (X - Y) * 2: 400 litres
 Minimum Volume = 0 * well volume: 2400 litres
 Total Volume Developed: 24 litres
 Development Method: Water Pump Surge Block (kms) 1 Baler Other (specify):
 Turbidity Ratings *
 Before Dev:
 After Dev:

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 25/14 Weather: Cloudy hot + 18°C
 Minimum Volume = 3 * well volume: 1200 litres
 Purge Sample Method: Water Pump Peristaltic Siphon Baler Other (specify):
 Turbidity Ratings *
 Purging:
 Sampling:

Well volume Purge (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Flow Rate (L/min)
0		155	20.1	126		7:16	2.15 L/min
1	7.4	155	20.1	123		5:21	"
2	7.2	146	20.9	122		7:48	"
3		145	21.8	117		8:23	"

Odour: Yes No Description:
 Sheen: Yes No Description:
 Colour (initial): Clear (stable)
 Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable, Dissolved Oxygen (±0.05%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown; Moderate: slightly lower than 10 cm drawdown; Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION (A) Date and Time: July 25/14 Analytical Laboratory: Procon
 (B) Date and Time: (C) Date and Time: (D) Date and Time:

VOC/NPH: EPH corrected (i.e. LEPH/HEPH): BTEX/YPHMTAE: EPH:
 Non-Chlorinated Phenol: PAHs: Glycols:
 Dissolved Metals: Chlorinated Phenols: PCBs:
 Pesticides: Field Filter & Preserved?: Total Metals:
 pH: Other:

Duplicate Sample ID: Duplicate Sample Parameters:

NOTES: Bottle and Preservative Requirements correspond to Laboratory Standards

COMMENTS:

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record

Version 2.0



GENERAL INFORMATION

Monitoring Well ID: M Well-2
 Location: 456 Brin St Vancouver Bc
 Sampler: Belenza

Project #/Name: 12108-02
 Client: Le Ku

WELL INFORMATION

Well Cover Type: Flush / Stack-up recessed / Lock / No-lock / Well Casing: 2-inch (51 mm) / Diameter or other: _____
 Screened Interval (m): 6-11' / Well Head Vapour Reading: 1.3 ppm or %LEL RKL Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: July 14/14 / Weather: Sunny + 25°C
 Depth to Bottom of Well from TOC (X): 3.38 metres
 Depth to Water from Top of Casing (Y): 2.36 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X - Y): -1.02 metres
 Volume of Water in Well = (X - Y) * 2: 2.54 litres
 Minimum Volume = 6 * well volume: 12.00 litres
 Total Volume Developed: _____ litres
 Development Method: Water Pump / Surge Block (time: 5) / Bailer / Other (specify): _____
 Turbidity Ratings: Before Dev: _____ / After Dev: _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/14 / Weather: Sunny + 25°C
 Minimum Volume = 6 * well volume: _____ litres
 Pump/Sample Method: Water Pump / Peristaltic (pump size): _____ / Bailer / Other (specify): _____
 Turbidity Ratings: Purging: _____ / Sampling: _____

Well volume Purged (L)	pH	Conductivity (µS/cm or mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Flow (L/min)	Flow (mL/min)
0						18:06	2.992	0.13
1	6.6	729	16.6	120		18:13	2.973	"
2	6.6	716	16.1	84		18:24	2.627	1.2
3	6.5	711	16.1	42		18:25	2.643	1.2

Odour: Yes / No / Description: _____
 Sheen: Yes / No / Description: _____
 Colour (initial): 2.15 (stable) / Recovery: Slow / Moderate / Fast

NOTES: Field Parameters and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±2%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque
 **Recovery Estimate - Slow: greater than 10 cm drawdown / Moderate: slightly lower than 10 cm drawdown / Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION (A) Date and Time: July 15/14 / Analytical Laboratory: MLL
 (B) Date and Time: _____ / (C) Date and Time: _____ / (D) Date and Time: _____

VOC/MPH / STX/VPH/MTBE / EPH
 EPH corrected (i.e. UEPH/NEPH) / PAHs / Glycols
 Non-Chlorinated Phenol / Chlorinated Phenols / PCBs
 Dissolved Metals / Field Filler & Preserved? / Total Metals
 Pesticides / pH / Other: _____

Duplicate Sample ID: _____ / Duplicate Sample Parameters: _____

NOTES: Bottle and Preservation Requirements Correspond to Laboratory Standards

COMMENTS: _____



GENERAL INFORMATION

Well No. MW-2 Project Name/No. 17349 Client City of Victoria
 Location 1000 12th St Date Mar 12/15 Weather Sunny, 10°C
 Sampler Ryan

WELL INFORMATION

Well Cover Type Flush Lock
 Stick-up No-lock Well Casing 2-inch (51 mm)
 Diameter or other _____
 Screened Interval (indicate units): _____
 Well Head Vapour Reading 85 ppm %LEL Gastech 123BME Minihac Hnu

DEVELOPMENT AND PURGING INFORMATION AND OBSERVATIONS

Dev. Date _____ Purge Date: Mar 12/15

Depth to Bottom of Well from TOC (X) _____ metres Minimum Volume to Develop = 5 x well volume _____ litres
 Depth to Water from Top of Casing (Y) 2.26 metres Total Volume Developed _____ litres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) _____ metres Minimum Volume to Purge = 3 x well volume _____ litres
 Volume of Water in Well = (X - Y) x 2 _____ litres Total Volume Purged _____ litres
 (for 2-inch diameter well casing)

Development Method Water Pump Water Pump with Surge Block Bailor Other (specify): _____
Purge-Sample Method Bailor Water Peristaltic Pump Other (specify): 30
Turbidity Ratings (See notes)
 Before Development _____
 After Development _____
 Purging 1

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Low flow sampling only D/FW (mgTOC)	Res (mL/min)
1	7.6	575	12.8	-44	-			
2	7.2	598	12.2	-56	-			
3	7.2	602	12.2	-51	-			

Odour Yes No Description: _____ Colour: _____
 Sheen Yes No Description: _____ Recovery Slow Moderate Fast

NOTES

Field Parameter and Stability Cautions: pH (±0.2 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±20mV); and if applicable Dissolved Oxygen (±10% or ±0.2 mg/L - whichever is greater); Turbidity (10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

SAMPLING INFORMATION AND OBSERVATIONS

Date and Time: Mar 12/15 HPH Sample Date: Mar 12/15

Sampling Method Water Pump Peristaltic Pump Bailor Other (specify): _____
Turbidity Ratings (See notes)
 EPH/PAH _____
 Other _____
 Analytical Laboratory Munro

Parameters Sampled (Bottle and Preservative Requirements Correspond to Laboratory Standards)

VOC/VPH <input type="checkbox"/>	BTEX/VPH <input type="checkbox"/>	EPH <input type="checkbox"/>
EPH compounds (i.e. LEPH+EPH) <input type="checkbox"/>	PAHs <input type="checkbox"/>	Phenol <input type="checkbox"/>
Chlorinated Phenolics <input type="checkbox"/>	PCBs <input type="checkbox"/>	Total Metals <input type="checkbox"/>
MTEE <input type="checkbox"/>	Ethylene Glycol <input type="checkbox"/>	PCBs <input type="checkbox"/>
Dissolved Metals <input type="checkbox"/>	pH <input type="checkbox"/>	Other <u>benzene(m) p,p'-DDE</u>
	Field Filter & Preserved? <input type="checkbox"/>	

COMMENTS:

120125 MCA - Well Development, Purge, and Sample Form

Version 2.1

GENERAL INFORMATION

Monitoring Well ID: MW14-2 Project #/Name: 12349-14
 Location: 550 Markham Ave. Vancouver Client: Golden Ventures
 Sampler: D. Lamm

WELL INFORMATION

Well Cover Type: Flush Stick-up metal grate Lock: No lock Well (Casing) 24-inch (51 mm) Diameter or other: _____

Screened Interval (in'): _____ Well Head Venturi Reading: ppm or %LEL RKI Eagle MinRae Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: _____ Weather: _____

Depth to Bottom of Well from TOC (X) 3.38 metres
 Depth to Water from Top of Casing (Y) 2.25 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) _____ metres
 Volume of Water in Well = (X - Y) * 2 _____ litres
 Minimum Volume = 6 * well volume _____ litres
 Total Volume Developed _____ litres

Development Method: Water Pump Surge Block (time: _____) Bailer Other (specify): _____

Turbidity Ratings *
 Began Dev. _____
 After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Feb. 11/15 Weather: overcast

Minimum Volume = 3 * well volume _____ litres

Purge/Sample Method:
 Water Pump
 Peristaltic (pump rate: _____)
 Bailer
 Other (specify): _____

Turbidity Ratings *
 Purging _____
 Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm or (µmhos/cm))	Temperature (°C)	ORP (mV)	DO (mg/L)	Temp	Low or sample only DTW (mB100)	Recovery (min)
0						2:50	2.25	24/4
1	3.9	730	11.9	-22	0.2	2:55	2.35	4
2	4.4	744	11.8	-2		3:01	2.47	4
3	4.4	748	11.7	+7		3:05	2.57	4

Odour: Yes No Description: _____
 Sheen: Yes No Description: _____
 Colour (initial): clear (initial): _____
 Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10 mV); and if applicable: Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimates: Slow: greater than 10 cm drawdown; Moderate: slightly lower than 10 cm drawdown; Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: Feb 11/15 Analytical Laboratory: Merx
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____

VOC/PH BTEX/PH/MTBE EPH
 EPH corrected (i.e. LCPH/HEPH) PAHs Glycols
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Food Filler & Preserved? Total Metals
 Pesticides pH Other: _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservation Requirements Correspond to Laboratory Standards

COMMENTS: benzo (a) pyrene

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MNW4-2 Project # Name: 12349-14
 Location: Portion of Site Client: _____
 Sampler: GP

WELL INFORMATION

Well Cover Type: Flush Stick-up _____ m above grade Lock: No-Lock _____
 Well Casing: _____ 2-inch (51 mm) Diameter or other: _____
 Screened Interval (m): _____ Well Head Vapour Reading: _____ ppm or %LEL RFI Edge Min/Pax Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: _____ Weather: _____
 Depth to Bottom of Well from TOC (X) 3.371 metres
 Depth to Water from Top of Casing (Y) _____ metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) _____ metres
 Volume of Water in Well = (X - Y) * 2 _____ litres
 Minimum Volume = 6 * well volume _____ litres
 Total Volume Developed _____ litres
 Development Method: Water Pump Surge Block (one: _____) Bailer Other (specify): _____
 Turbidity Ratings *
 Before Dev. _____
 After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: June 2/15 Weather: Cloudy
 Minimum Volume = 3 * well volume _____ litres
 Purge Sample Method: Water Pump Peristaltic pump ser. 348 Bailer Other (specify): _____
 Turbidity Ratings *
 Purging: 3
 Sampling: 2

Well volume Purged (L)	pH	Conductivity (µS/cm or mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTOC)	Rate (mL/min)
0						3:56	2.525	
0.5	6.73	687	16.2	62		3:59	2.582	
1	6.60	655	15.6	46		4:02	2.603	
2	6.50	645	15.7	37		4:05	2.640	
3	6.50	643	15.1	63		4:11	2.675	

Odour: Yes No Description: _____
 Sheen: Yes No Description: _____
 Colour (Initial): 5/24 (stable): 6/24
 Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimates - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: MALCOLM
 (B) Date and Time: _____ (C) Date and Time: June 2/15 (D) Date and Time: _____
 VOC/PI: STEK/PH/MTBE EPI
 EPH corrected (i.e. LEPH/HEPH) PAHs Cyclois
 Non-Chlorinated Phenols Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved* Total Metals
 Pesticides pH Other: _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____



GENERAL INFORMATION

Monitoring Well ID: MW14-3 Project #/Name: 12108-02
 Location: 956 Pitt St Vancouver BC Client: Le Kul
 Sampler: R. Leman

WELL INFORMATION

Well Cover Type: Flush Slick-up Lock No-lock Well Casing: 2-inch (51 mm) Diameter or other: _____
 Screened Interval (m): 5.13 Well Head Vapour Heating: 4.4 ppm or %LEL PNI Eagle Min/Ras Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: July 14/14 Weather: Sunny 23°C
 Depth to Bottom of Well from TOC (X): 2.59 metres
 Depth to Water from Top of Casing (Y): 1.92 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X-Y): 1.16 metres
 Volume of Water in Well = (X · Y) · π · 2: 3.30 litres
 Minimum Volume = 8 · well volume: 14 litres
 Total Volume Developed: 11 litres
 Development Method: dry lift
 Water Pump Turbidity Readings: Before Dev. _____ After Dev. _____
 Surge Block (time: _____)
 Bailer
 Other (specify) _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/14 Weather: Sunny 22°C
 Minimum Volume = 3 · well volume _____ litres
 Purge/Sample Method: Water Pump
 Peristaltic Pump
 Bailer
 Other (specify) _____
 Turbidity Readings: Purging _____ Sampling _____

Well volume Purged (L)	pH	Conductivity (µmhos/cm @ 25°C)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (in BTOC)	Flow (ml/min)
0	-	608	17	-	-	10:55	1.435	0.15
1	6.5	672	17.2	131	-	11:04	2.415	-
2	6.3	657	17.5	128	-	11:10	2.125	-
3	6.4	661	17.4	132	-	11:15	2.18	-

Odour: Yes No Description: _____ Colour (initial): clear (stable) _____
 Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable, Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque
 **Recovery Estimate: Slow: greater than 10 cm drawdown; Moderate: slightly lower than 10 cm drawdown; Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: July 15/14 Analytical Laboratory: Prova
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/VPH BTEX/VPH/MTBE EPH
 EPH corrected (i.e. LEPH/HEPH) PAHs Glycols
 Non-Chlorinated Phenols Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:

① 7 V. 11. 14
 ② 3.8 11. 14
 ③ 1.8 11. 14

GENERAL INFORMATION

Monitoring Well ID: MW14-4 Project #/Name: 12128-02
 Location: 456 Prince George Vancouver Client: Le Kul
 Sampler: Person

WELL INFORMATION

Well Cover Type: Flush Slick-up manhole Lock: No-lock Well Casing: 2 inch (51 mm) Diameter or other: _____
 Screened Interval (m): 0' - 8' Well Head Vapour Reading: 81.2 ppm or %LEL RMI Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: July 4/14 Weather: Cloudy + 21°C
 Depth to Bottom of Well from TOC (X): # 235 metres
 Depth to Water from Top of Casing (Y): 1.57 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X - Y): 0.81 metres
 Volume of Water in Well = (X - Y) * P: 11.7 litres
 Minimum Volume = 5 * well volume: 9.2 litres
 Total Volume Developed: 10 litres
 Development Method: Water Pump Surge Block (time: _____) Bailer Other (specify): _____
 Turbidity Ratings *
 Before Dev: _____
 After Dev: _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/14 Weather: Sunny Hot
 Minimum Volume = 3 * well volume: _____ litres
 Purge/Sample Method: Water Pump Peristaltic pump/saw: _____ Bailer Other (specify): _____
 Turbidity Ratings *
 Purging: _____
 Sampling: _____

Well volume Purged (L)	pH	Conductivity (uS/cm or (mS/cm))	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Low flow sampling only DTW (mBTOW)	Rate (mL/min)
0						11:40	1.54	0.158/min
1	8.0	405	19.3	20		11:45	1.625	"
2	6.0	419	19.4	46		11:50	1.644	
3	5.9	389	19.4	44		11:58	1.632	

Odour: Yes No Description: _____ Colour (Initial): _____ (stable)
 Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable, Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly over than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: 7/15/14 Analytical Laboratory: 301514
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/PH: BTEX/PH/MTBE: EPH:
 EPH corrected (i.e. LEPA/HEPH): PAHs: Glycols:
 Non-Chlorinated Phenol: Chlorinated Phenols: PCBs:
 Dissolved Metals: Field Filter & Preserved?: Total Metals:
 Pesticides: pH: Other: _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:



GENERAL INFORMATION

Monitoring Well ID: MW14-5 Project #/Name: 12108-07
 Location: 461 Price Street Vancouver Client: ICF Inc.
 Sampler: MWH

WELL INFORMATION

Well Cover Type: Flush / Suck-up Lock / No-lock Well Casing: 2-inch (51 mm) Diameter or other:
 Screened Interval (m): 4' - 9' Well Head Vapour Rating: 11.9 ppm or %LEL PAK Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: July 23/14 Weather: Sunny 15°C
 Depth to Bottom of Well from TOC (X): 2.91 metres
 Depth to Water from Top of Casing (Y): 1.14 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X-Y): 1.54 metres
 Volume of Water in Well = (X · Y) · 2: 3.14 litres
 Minimum Volume = 8 · well volume: 19 litres
 Total Volume Developed: 19 litres
 Development Method: Water Pump / Surge Block (time: _____) / Bailer / Other (specify): _____
 Turbidity Ratings: * Before Dev. _____ / After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: _____ Weather: _____
 Minimum Volume = 8 · well volume _____ litres
 Purge/Sample Method: Water Pump / Peristaltic Pump / Bailer / Other (specify): _____
 Turbidity Ratings: * Purging _____ / Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTOC)	Rate (mL/min)
0			19.0			12:20	1.15	1.15 / min
1	6.3	710	19.0	66		12:32	1.225	
2	6.3	420	20.4	54		12:39	1.245	
3	6.1	522	21.1	51		12:43	1.285	
4	6.2	549	21.3	50		12:46	1.305	

Odour: Yes / No Description: septic-like smell Colour (initial) _____ (stable) _____
 Sheen: Yes / No Description: _____ Recovery: * Slow / Moderate / Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimates - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: _____
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/MPH BTEX/PH/MTR FPH
 EPH corrected (i.e. LEPH/HEPH) PAHs Glycols
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____



GENERAL INFORMATION

Monitoring Well ID: MW 14-B
Location: 453 Pine Street
Sampler: 2/1/11

Project #/Name: 12128-37
Client: Lebra

WELL INFORMATION

Well Cover Type: Flush Sock-up m above grade Lock: No-lock Well Casing: 2 inch (51 mm) Diameter or other:
Screening Interval (m): 5.0 Well Head Vapour Reading: 0.7 ppm or % LEL RKL Edge Min/Ras Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: July 15/11 Weather: Sunny 25C
Depth to Bottom of Well from TOC (X) 3.0 metres
Depth to Water from Top of Casing (Y) 1.94 metres
Depth to Product (if applicable) _____ metres
Length of Water Column (X-Y) 1.07 metres
Volume of Water in Well = (X - Y) * 2 2.14 litres
Minimum Volume = 6 * well volume 13 litres
Total Volume Developed 6 litres
Development Method: power Jet 3x
Water Pump Turbidity Ratings *
Surge Block (time: _____) Before Dev. _____
Bailer After Dev. _____
Other (specify): _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/11 Weather: Sunny Hot
Minimum Volume = 3 * well volume _____ litres
Purge/Sample Method: Water Pump
 Peristaltic Pump Bailer
Other (specify): _____
Turbidity Ratings *
Purging _____
Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTOC)	Head (mWater)
0							1.94	1.5/10m
1	7.0	678	19.0	45		1:16	2.125	
2	6.4	635	19.1	47		1:21	2.130	
3	6.3	641	19.2	46		1:26	2.223	

Odour: Yes No Description: _____ Colour (initial) grey (stable) _____
Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units), Temperature (±0.2 °C), Specific Conductance (±3%), Oxidation-Reduction Potential (±10mV), and if applicable: Dissolved Oxygen (±10%)
*Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque
**Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: July 15/11 Analytical Laboratory: July 15/11
(B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
VOC/MPH BTEX/PH/MTBE TPH
EPH collected (i.e. LEPH/HEPH) PAHs Glycols
Non-Chlorinated Phenol Chlorinated Phenols PCBs
Dissolved Metals Field Filter & Preserved? Total Metals
Pesticides pH Other: _____

Duplicate Sample ID: MW14-A Duplicate Sample Parameters: VOC/PAH/ Diss Metals / pH / Phenols

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:

- ① 2.2
- ② 2.2
- ③ 2



GENERAL INFORMATION

Well No. MW14-6 Project Name/No. 12349 Client: P. & J. Holdings
 Location: 410 Ave St Date: Mar 12/18 Weather: cloud 10°
 Sample: EDM

WELL INFORMATION

Well Cover Type: Flush / Stick-up Lock / No-lock Well Casing Diameter or other: 2 inch (51 mm)
 Screened Interval (indicate units): _____
 Well Head Vapour Reading _____ ppm 7 %LEL Gascheck 1234ME MiniPac Inu

DEVELOPMENT AND PURGING INFORMATION AND OBSERVATIONS

Dev. Date: _____ Purge Date: Mar 12/18

Depth to Bottom of Well from TOC (X) 1.894 metres Minimum Volume to Develop = 6 x well volume _____ litres
 Depth to Water from Top of Casing (Y) _____ metres Total Volume Developed _____ litres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) _____ metres Minimum Volume to Purge = 7 x well volume _____ litres
 Volume of Water in Well = (X - Y) x Z _____ litres Total Volume Purged _____ litres
 (for 2-inch diameter well casing)

Development Method Waters Pump Waters Pump with Surge Block Roller Other (specify) _____
Purge/Sample Method Bailor Waters Peristaltic pump prim: 2.14 Other (specify) _____
Turbidity Ratings See 000 2000
 Before Development: _____
 After Development / Flushing: 5

Well volume Purged (L)	pH	Conductivity (µS/cm) (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Turbidity (NTU)	
						Time	Rate (mL/min)
1	6.0	502	12.3	-54	-	1.976	-
2	6.1	553	12.2	-62	-	2.025	-
3	6.1	514	12.2	-58	-	-	-

Odour: Yes No Description: _____ Colour: light grey
 Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES
 Field Parameter and Sensitivity Guidance: pH (±0.2 standard units); Temperature (±0.2 °C); Specific Conductance (±0.5%); Oxidation-Reduction Potential (±20 mV); and if applicable: Dissolved Oxygen (±10% or ±0.2 mg/L - whichever is greater); Turbidity (10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

SAMPLING INFORMATION AND OBSERVATIONS Date and Time: Mar 12/18 EPH Sample Date: Mar 13/18

Sampling Method Waters Pump Peristaltic Pump Bailor Other (specify) _____
Turbidity Ratings See 000 2000
 [PH/PAH] 5
 Other: _____
 Analytical Laboratory: Mapex

Parameters Sampled (Bottle and Preservative Requirements Correspond to Laboratory Standards):

VOC/MPH <input type="checkbox"/>	BTEX/VPH <input checked="" type="checkbox"/>	EPH <input type="checkbox"/>
EPH corrected (i.e. LEPM/HEPH) <input type="checkbox"/>	PAHs <input type="checkbox"/>	Phenol <input type="checkbox"/>
Chlorinated Phenolics <input type="checkbox"/>	PCBs <input type="checkbox"/>	Total Metals <input type="checkbox"/>
MTBE <input type="checkbox"/>	Ethylene Glycol <input type="checkbox"/>	PCBs <input type="checkbox"/>
Dissolved Metals <input type="checkbox"/>	pH <input type="checkbox"/>	Field Filter & Preserved? <input type="checkbox"/>

Other: base (A) pyrene

COMMENTS: _____
 120425 NICA - Well Development, Purge, and Sample Form

Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW14-G Project #/Name: 12349-14
 Location: 456 Prior St, Vancouver & Client: Grin-Gold Ventures
 Samples: _____

WELL INFORMATION

Well Cover Type: Flush Sock-up Lock No-lock Well Casing: 2-inch (51 mm) Diameter or other: _____

Screened Interval (m): _____ Well Head Vapour Reading: _____ ppm or %LEL RMI Eagle MiniRac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: _____ Weather: _____

Depth to Bottom of Well from TOC (X) 3.0m metres
 Depth to Water from Top of Casing (Y) 1.72 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X-Y) _____ metres
 Volume of Water in Well = (X - Y) x 2 _____ litres
 Minimum Volume = 6 x well volume _____ litres
 Total Volume Developed _____ litres

Development Method: Water Pump Gauge Block (time: _____) Bailer Other (specify) _____

Turbidity Ratings *
 Before Dev. _____
 After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Feb 11/15 Weather: bc 21°C

Minimum Volume = 3 x well volume _____ litres

Purge/Sample Method:
 Water Pump
 Peristaltic (specify) _____
 Bailer
 Other (specify) _____

Turbidity Ratings *
 Purging _____
 Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Drawdown (m)	Rate (L/min)
0						2:05	1.75	3.2 L/min
1	3.9	502	10.2	-71		2:10	1.92	"
2	3.8	534	10.2	-76		2:15	2.44	"
3	3.9	529	10.1	-81				

Odour: Yes No Description: _____
 Sheen: Yes No Description: _____

Colour (initial) _____ (stable) _____
 Recovery: Slow Moderate Fast

NOTE: Field Parameter and Stability Guidance: pH (±0.1 standard units), Temperature (±0.2 °C), Specific Conductance (±0%), Oxidation-Reduction Potential (±10mV) and if applicable: Dissolved Oxygen (±1%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate: Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: Feb 11/15 Analytical Laboratory: Mapcon
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____

VOGMPH BTEX/PHMTSE EPH
 FPH (corrected for LEPI/HEOH) PAHs Glycols
 Non-Chlorinated Phenols Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: benzo (a) pyrene & pyrene

GENERAL INFORMATION

Monitoring Well ID: MW11-6 Project #/Name: 106 12349
 Location: Sugarcane Hg Sta Client: _____
 Sampler: GA

WELL INFORMATION

Well Cover Type: Flush / Soak-up / not applicable Lock: / No-lock Well Casing: 2 inch (51 mm) / Diameter or other: _____
 Screened Material (m): _____ Well Head Vapour Reading: _____ ppm or %LEL PFI Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: _____ Weather: _____
 Depth to Bottom of Well from TOC (X): 2.186 metres
 Depth to Water from Top of Casing (Y): 1.125 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X-Y): _____ metres
 Volume of Water in Well = (X * Y) * Z _____ litres
 Minimum Volume = 8 * well volume _____ litres
 Total Volume Developed _____ litres
 Development Method: Water Pump / Surge Block (name): _____ / Bailer / Other (specify): _____
 Turbidity Ratings: Before Dev. _____ / After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: 3/22/15 Weather: cloudy
 Minimum Volume = 8 * well volume _____ litres
 Purge/Sample Method: Water Pump / Periodic purging / Bailer / Other (specify): _____
 Turbidity Ratings: Purging 3 / Sampling 1

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mBTOC)	Rate (mL/min)
0						17:00	6.95	
0.5	6.19	671	15.8	-98		17:10	2.137	
1	6.17	502	15.9	-104		17:14	2.141	
2	6.19	492	16.3	-108		17:21	2.195	
3	6.19	451	16.4	-114		17:27	2.220	

Odour: Yes / No / Description: _____ Colour (initial): _____ (stable): _____
 Sheen: Yes / No / Description: _____ Recovery: Slow / Moderate / Fast

NOTES: Field Parameter and Stability Guidance. pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±2%); Oxidation-Reduction Potential (±10mV), and if applicable Dissolved Oxygen (±1%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate: Slow: greater than 10 cm drawdown; Moderate: slightly lower than 10 cm drawdown; Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: Maxxam
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/PH DTEX/PH/MTBE EPH
 EPH corrected (i.e. LEPH/HEPH) PAHs Glycols
 Non-Chlorinated Phenols Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other: _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:

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GENERAL INFORMATION

Monitoring Well ID: MW14-7 Project #/Name: 12108-02
 Location: 456 Fair St, Vancouver Client: Le Kwei
 Sampler: B. Khan

WELL INFORMATION

Well Cover Type: Flush / Stick-up / submersible Lock: No-rock / Well Casing: 2-inch (51 mm) / Disolver or other: _____
 Screened Interval (m): 6' - 12' Well Head Vapour Reading: 1.3 ppm or %LEL PKI Eagle MiniPac Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: July 17/04 Weather: Sunny, +25°C
 Depth to Bottom of Well from TOC (X): 3.0 metres
 Depth to Water from Top of Casing (Y): 2.2 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X - Y): 0.8 metres
 Volume of Water in Well = (X - Y) * π * r²: 36 litres
 Minimum Volume = 6 * well volume: 21.6 litres
 Total Volume Developed: 5 litres
 Development Method: Water Pump / Surge Block (Time: _____) / Bailer / Other (specify): _____
 Turbidity Ratings: * Before Dev: _____ / After Dev: _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: July 15/04 Weather: Sunny 16°C +16°C
 Minimum Volume = 3 * well volume: _____ litres
 Purge/Sample Method: Water Pump / Peristaltic Pumping Unit / Bailer / Other (specify): _____
 Turbidity Ratings: * Purging: _____ / Sampling: _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Drawdown (m) (DTW) (mBTOC)	Rate (mL/min.)
0						<u>1:58</u>	<u>2.15</u>	<u>15.0</u>
1	<u>6.2</u>	<u>237</u>	<u>16.5</u>	<u>62</u>		<u>1:55</u>	<u>2.22</u>	<u>2.295</u>
2	<u>5.8</u>	<u>188</u>	<u>16.1</u>	<u>104</u>		<u>2:01</u>	<u>2.46</u>	
3	<u>5.8</u>	<u>197</u>	<u>16.0</u>	<u>118</u>		<u>2:06</u>	<u>2.71</u>	

Odour: Yes / No / Description: _____
 Sheen: Yes / No / Description: _____
 Colour (initial): clear (stable): cloudy
 Recovery: Slow / Moderate / Fast

NOTES: Field Parameter and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10mV); and if applicable: Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown / Moderate: slightly lower than 10 cm drawdown / Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: _____
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/PH: BTEX/VPH/MTBE: EPH:
 EPH corrected (i.e. LEPH/HEPH): PAHs: Glycols:
 Non-Chlorinated Phenols: Chlorinated Phenols: PCBs:
 Dissolved Metals: Field Filter & Preserved?: Total Metals:
 Pesticides: pH: Other: _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottles and Preservative Requirements Correspond to Laboratory Standards

COMMENTS:

① - 3 R
 ② 1L
 ③ 1L
 ④ 20L



GENERAL INFORMATION

Well No: MW14-7 Project Name/No: 12549 Client: City of Victoria
 Location: 45th Row St Date: Mar 12/15 Weather: sun clear 10C
 Sampler: RFA

WELL INFORMATION

Well Cover Type: Flush / Stick-up Lock / No-lock
 Well Casing: 2-inch (51 mm)
 Diameter or other: _____
 Screened Interval (indicate units): _____
 Well Head Vapour Reading: 55 ppm %LEL Gastech 1238ME MGA Flu

DEVELOPMENT AND PURGING INFORMATION AND OBSERVATIONS

Dev. Date: _____ Purge Date: Mar 12/15
 Depth to Bottom of Well from TOC (X) _____ metres Minimum Volume to Develop = 5 * well volume _____ litres
 Depth to Water from Top of Casing (Y) 1.895 metres Total Volume Developed _____ litres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y) _____ metres Minimum Volume to Purge = 3 * well volume _____ litres
 Volume of Water in Well = (X * Y) * 2 _____ litres Total Volume Purged _____ litres
 (for 2-inch diameter well casing)

Development Method: Water Pump / Water Pump with Surge Block / Roller / Other (specify): _____
 Purge/Sample Method: Roller / Water Peristaltic Pump (Flow rate: 2.4) / Other (specify): _____
 Turbidity Ratings (see scale above): Before Development: _____ / After Development: 2 / Purging: 2

Well volume Purged (L)	pH	Conductivity (uS/cm or mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	BTW (mBTWC)	Rate (mL/min)
<u>1</u>	<u>7.6</u>	<u>440</u>	<u>12.1</u>	<u>-76</u>	-		<u>1,926</u>	
<u>2</u>	<u>7.6</u>	<u>341</u>	<u>12.0</u>	<u>-89</u>	-		<u>1,585</u>	
<u>3</u>	<u>7.6</u>	<u>386</u>	<u>12.0</u>	<u>-95</u>	-			

Odour: Yes No Description: _____ Colour: grey
 Sheen: Yes No Description: _____ Recovery: Slow Moderate Fast

NOTES
 Field Parameter and Stability Guidance: pH (±0.2 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±50mV); and if applicable: Dissolved Oxygen (±10% or ±0.2 mg/L - whichever is greater); Turbidity (10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.

SAMPLING INFORMATION AND OBSERVATIONS

Date and Time: Mar 12/15 EPH Sample Date: Mar 12/15
 Sampling Method: Water Pump / Peristaltic Pump / Roller / Other (specify): _____
 Turbidity Ratings (see scale above): EPH/PAH: 2 / Other: _____
 Analytical Laboratory: Mason

Parameters Sampled (Bottle and Preservative Requirements Correspond to Laboratory Standards):
 VOC/VPH BTEX/VPH EPH
 EPH corrected (i.e. 1-EP-1-HEPH) PAHs Phenol
 Chlorinated Phenolics PCBs Total Metals
 MTBE Ethylene Glycol HCSs
 Dissolved Metals pH Field Filter & Preserved? Other: _____

COMMENTS: _____
 (70124 MCA - Well Development, Purge, and Sample Form)

GENERAL INFORMATION

Monitoring Well ID: MW15-B
 Location: 455 Prince St Vancouver
 Sampler: B. K...

Project #/Name: 12344-14
 Client: G... ..

WELL INFORMATION

Well Cover Type: Flush / Stick-up / gabion well
 Lost: / No-CK
 Well Casing: 2-inch (51 mm) / Diameter another: _____
 Screened Interval (m): _____ Well Head Vapour Reading: 126.7 ppm or %LEL RMI Eagle MiniRae Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Feb. 11/15 Weather: 0/c +11°C
 Depth to Bottom of Well from TOC (X): 2.94 metres
 Depth to Water from Top of Casing (Y): 6.185 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X-Y): 1.245 metres
 Volume of Water in Well = (X - Y) * π * r²: 2.5 litres
 Maximum Volume = 8 * well volume: 15 litres
 Total Volume Developed: 9 litres
 Development Method: Permeable / 4 times
 Turbidity Ratings*: Before Dev / After Dev
 Waters Pump:
 Surge Block time: 5 min
 Bailor:
 Other (specify): _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: Feb 12/15 Weather: Sunny 18
 Minimum Volume = 3 * well volume: _____ litres
 1. 300 litres
 Purge/Sample Method: Water Pump
 Peristaltic Pump:
 Bailor:
 Other (specify): _____
 Turbidity Ratings*: _____
 Purging: _____
 Sampling: _____

Well volume Purged (L)	all	Conductivity (µmhos/cm or µS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mSTOC)	Rate (mL/min)
0						11:03	1.319	0.22/min
1	6.40	680	11.9	118		11:08	1.11	
2	6.27	670	11.8	115		11:13	1.25	
3	6.38	670	11.9	104		11:17	2.01	
4	6.39	670	12.1	93		11:21	2.13	
							2.14	

Odour: Yes No Description: _____
 Sheen: Yes No Description: _____
 Colour (initial): 8 (stable): 1
 Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH: ±0.1 standard units; Temperature (±0.2 °C); Specific Conductance (±5%); Oxidation-Reduction Potential (±10mV); and if applicable, Dissolved Oxygen (10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque
 **Recovery Estimate - Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: Feb 12/15 Analytical Laboratory: Prova
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/MPH BTEX/PHM/TRE EPH
 EPH selected (i.e. LE^{PH}HC^{PH}) PAHs Glycols
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other: _____

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____
 NOTES: Bottle and Preservative Requirements correspond to Laboratory Standards

COMMENTS: dissolved lead

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW15-9 Project #/Name: 12349-14
 Location: 486 Poirer St. Vancouver B.C. Client: Geithal Vancouver
 Sampler: Rikenna

WELL INFORMATION

Well Cover Type: Flush / Stick-up / manno grade Lock / No-lock Well Casing: 2-inch (51 mm) / Diameter or other: _____

Screened Interval (m): _____ Well Head Vapour Reading: 19 ppm or %LEL RFI Eagle MiniHan Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Feb 11/15 Weather: 01C #11°C

Depth to Bottom of Well from TOC (X): 2.72 metres
 Depth to Water from Top of Casing (Y): 6.49 metres
 Depth to Product (if applicable): _____ metres
 Length of Water Column (X-Y): 1.571 metres
 Volume of Water in Well = (X - Y) * Z: 3 litres
 Minimum Volume = 6 * well volume: 19 litres
 Total Volume Developed: 10 litres

Development Method: Surge block
 Water Pump
 Surge Block (time: 4 mins)
 Boiler
 Other (specify): _____

Turbidity Ratings*
 Before Dev. _____
 After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: FEB 18/15 Weather: Sunny 11°

Minimum Volume = 3 * well volume: _____ litres

Purge-Sample Method
 Waterloo Pump
 Peristaltic pump w/w.
 Boiler
 Other (specify): _____

Turbidity Ratings*
 Purging _____
 Sampling _____

Well Volume Purged (L)	pH	Conductivity (µS/cm or µmhos/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	Flow Rate (L/min) or DTW (mBTDC)	Rate (mL/min)
0						11:25	1.247	0.15
1	6.12	370	11.7	29		11:50	1.3	4
2	6.15	330	11.3	19		11:58	1.3	
3	6.17	330	11.2	10		12:08	1.3	
4								

Odour: Yes / No Description: He like odour
 Sheen: Yes / No Description: Slightly sheen

Colour (initial): 9 (stable)
 Recovery: Slow / Moderate / Fast

NOTES: Field Parameter and Stability Guidelines: pH (±0.1 standard units); Temperature (+/- 2 °C); Specific Conductance (±3%); Oxidation Reduction Potential (±10 mV), and if applicable: Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque.
 **Recovery Estimate - Slow: greater than 10 cm drawdown; Moderate: slightly over than 10 cm drawdown; Fast: within 10 cm drawdown.

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: _____
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____

VOC/VPH BTEX/VPH/THH EPH
 EPH corrected (i.e. LEPH/HEPH) PAHs Glycols
 Non-Chlorinated Phenols Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservation Requirements Correspond to Laboratory Standards

COMMENTS: Discharge Lead Only

Keystone Environmental Ltd.
Groundwater Developing, Purging and Sampling Record



Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW 15-10
 Location: 456 Poirer St. Vancouver BC
 Sampler: B. Larson

Project #/Name: 12349-14
 Client: Gainful Ventures

WELL INFORMATION

Well Cover Type: Flush Stick-up Lock No-lock Well Casing: 2-inch (51 mm) Diameter or other: _____
 Screened Interval (m): _____ Well Head Vapor Recovery 66.7 ppm or WLEL RKL Cap MiniRad Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev. Date: Feb 11/15 Weather: 0/c +17°C
 Depth to Bottom of Well from TOC (X): 2.35 metres
 Depth to Water from Top of Casing (Y): 1.05 metres
 Depth to Product (if applicable) _____ metres
 Length of Water Column (X-Y): 1.3 metres
 Volume of Water in Well = (X - Y) * A: 2.6 litres
 Minimum Volume = C * well volume: 15.6 litres
 Total Volume Developed: 16 litres
 Development Method: Water's Pump Surge Rock (hrs): 1 Bailer Other (specify) _____
 Turbidity Ratings: * Before Dev. _____ After Dev. _____

PURGING INFORMATION AND OBSERVATIONS

Purge Date: _____ Weather: _____
 Minimum Volume = J * well volume _____ litres
 Purge-Sample Method: Water's Pump Peristaltic (disposable) Bailer Other (specify) _____
 Turbidity Ratings: * Purging _____ Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	CRP (mV)	DO (mg/l)	Time	OTW (mBTC)	Rate (m/min)
<u>0</u>						<u>12:25</u>	<u>1.140</u>	<u>0.15 cfm</u>
<u>1</u>	<u>6.07</u>	<u>310</u>	<u>11.1</u>		<u>12</u>	<u>12:32</u>	<u>1.15</u>	
<u>2</u>	<u>6.05</u>	<u>310</u>	<u>11.1</u>		<u>7</u>	<u>12:39</u>	<u>1.15</u>	
<u>3</u>	<u>6.04</u>	<u>311</u>	<u>11.1</u>		<u>8</u>	<u>12:45</u>	<u>1.15</u>	

Colour: Yes No Description: Very slight Colour (initial) 10 (stable) 5
 Sheen: Yes No Description: Trace Recovery: ** Slow Moderate Fast

NOTES: Field Parameters and Stability Guidance: pH (±0.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±0.1 V), and if applicable: Dissolved Oxygen (±10%)
 *Turbidity may be determined subjectively using a scale of 1 to 10, where 1 is clear, 10 is opaque
 **Recovery Estimate: Slow: greater than 10 cm drawdown; Moderate: slightly lower than 10 cm drawdown; Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: _____ Analytical Laboratory: _____
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/PII BTEX/VPHM/TSE EPA
 EPH corrected (i.e. LEPM/HEP-H) PAHs Glycol
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Field Filter & Preserved? Total Metals
 Pesticides pH Other

Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Bottle and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: Dissolved LEPM to PAH

Version 2.0

GENERAL INFORMATION

Monitoring Well ID: MW15-1 Project # Name: 12-17-8314
 Location: N side of building 408 St. W. Client: Canadian Vickers
 Sampler: MC/MBL

WELL INFORMATION

Well Cover Type: Flush Stack-up Lock: No Lock Well Casing: 2-inch (51 mm) Diameter or other:
 Screened Interval (m): _____ Well Head Vacuum Reading: 4.1 rpm or %LEL RKI Eagle Min-Rate Other: _____

DEVELOPMENT INFORMATION AND OBSERVATIONS

Dev Date: March 18/15 Weather: Sunny 5°C
 Depth to Bottom of Well from TOC (X) 2.317 metres
 Depth to Water from Top of Casing (Y) 1.210 metres
 Depth to Product (if applicable) 15.821 metres
 Length of Water Column (X-Y) 0.958 metres
 Volume of Water in Well = (X-Y) * 2 1.9 litres
 Minimum Volume = 6 * well volume 11.5 litres
 Total Volume Developed 7 + 4 + 1 litres
 Development Method: Water Pump Surge Block (time: _____) Bailor Other (specify) _____
 Turbidity Ratings: Before Dev. 5 After Dev. 5

PURGING INFORMATION AND OBSERVATIONS

Purge Date: March 19/15 Weather: Rain + 9°C
 Minimum Volume = 3 * well volume _____ litres
 Purge Sample Method: Water Pump Percussive Surging Bailor Other (specify) _____
 Turbidity Ratings: Purging _____ Sampling _____

Well volume Purged (L)	pH	Conductivity (µS/cm) or (mS/cm)	Temperature (°C)	ORP (mV)	DO (mg/L)	Time	DTW (mSTOC)	Recovery (mL/min)
0						10:05	1.210	0.1
1	6.6	240	10.7	168		10:07	1.07	"
1.5	6.3	221	10.5	167		10:20	1.25	"
2	6.4	232	10.5	168				

Colour: Yes No Description: _____
 Sheen: Yes No Description: _____
 Colour (initial) _____ (stable) 5/100
 Recovery: Slow Moderate Fast

NOTES: Field Parameter and Stability Guidance: pH (10.1 standard units); Temperature (±0.2 °C); Specific Conductance (±3%); Oxidation-Reduction Potential (±10 mV); and if applicable, Dissolved Oxygen (±10%).
 *Turbidity may be determined subjectively using a scale of 1 to 13, where 1 is clear, 10 is opaque.
 **Recovery Estimate: Slow: greater than 10 cm drawdown Moderate: slightly lower than 10 cm drawdown Fast: within 10 cm drawdown

SAMPLING PARAMETER INFORMATION

(A) Date and Time: March 19/15 Analytical Laboratory: M/14/2011
 (B) Date and Time: _____ (C) Date and Time: _____ (D) Date and Time: _____
 VOC/PH BTEX/VH/M/T/BE EPH
 EPH corrected (i.e. LEPH/HEPH) PAH: Glycols
 Non-Chlorinated Phenol Chlorinated Phenols PCBs
 Dissolved Metals Fold Filter & Preserved? Total Metals
 Pesticides pH Other: _____
 Duplicate Sample ID: _____ Duplicate Sample Parameters: _____

NOTES: Antic and Preservative Requirements Correspond to Laboratory Standards

COMMENTS: _____

